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PSYCHE

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EDITORIAL

THE FUTURE OF ENGLISH

It is odd that in an age which displays so much interest in words and their ways, philological research should usually be directed into such barren fields. Philologists will surely be the last to discover the bearing of modern psychology on their devoted labours, the last to appreciate the uses of the gramophone in linguistic technique, and the last to realize that on the application of their labours and that technique the future of Empires may now depend.

If we wait once more for Necessity to mother our inventions, signs are not wanting that it is from darkest Africa that light will come. It is not by chance that modern music and modern sculpture have drawn their inspiration from the same source as Rider Haggard and Cecil Rhodes. The doctrinal consequences of the Flight into Egypt have yet to be assessed; and though by searching in the bulrushes we may not find another Moses, there is no doubt that logophily is badly in need of an Afrodisiac.

The future of Africa lies with those who can master African languages, and still more with those who can devise a more practical medium of communication, in commerce and in racial interchange, for our black brethren. That medium is likely to be some form of American, but there is no reason why it should not be English. The future, in fact, will be with the language which can simplify itself most rapidly, and the simplification of English is one of the most important branches of Orthology. The psychological, structural, and grammatical problems of simplification have never been adequately envisaged. At present both the vocabulary and the eccentricities of our speech add immeasurably to the difficulties raised by outworn methods. Advocates of Esperanto have profited by the situation to urge the need for a synthetic compromise. But when a language is already partly familiar to 500,000,000 persons, it seems a pity not to persevere scientifically.

The first task is to determine the number of terms which we actually need for particular purposes and in particular circumstances; in other words a study of levels of communication, in connection with translation and periphrasis. There are savage peoples with a vocabulary of more than 12,000 words, while for President Wilson's State papers 4,000 are said to have sufficed. How far could one get with 1000 words if not in too great a hurry?

Consider a modern conversation, the sort for which that triumph of scientific ingenuity, the telephone, is chiefly used. Here is one reported in the *New Yorker* as we go to press, and everyone will recognize the justice of the indictment.

"Hello." "Hello." "Is that you?" "Yes, it's me." "What?" "I said, yes, it's me." "Oh. It's you? Well, can you come over to-day?" "Can I come over?" "Yes, can you come over?" "You mean to-day?" "Yes. Can you come over to-day?" "Do you want to see me?" "What?" "I said, do you want to see me?" "Yes. Can you come over?" "Well, perhaps I can." "Perhaps you can?" "Yes, perhaps I can. What time do you want me to come over?" "Can you come over about three?" "About tea?" "No. I said, about three." "Oh, I see. About three." "Yes, about three. Can you come over about then?" "No, I can't. What about four?" "Well, I won't be in then." "Oh, that's too bad." "What did you say?" "What?" "I said, what did you say?" "Oh, I said, that's too bad." "Yes, it is too bad, isn't it?" "Yes, It's too bad." "Well, goodbye." "Goodbye, dear." "What?" "I said goodbye." "Oh, I see. Goodbye." "Goodbye."

If some of this unaccountable enthusiasm for the explicit were scientifically canalized, and people were accustomed to the use of five words where one might suffice, all literary abbreviations and synonyms could be dispensed with in conversation. It would then be discovered that with a command of 1000 easily memorized names of common objects, situations, and occurrences, and some 500 linguistic devices for operating and connecting them, a foreigner could make himself more fluent and intelligible after a three months course in English than most Scotchmen and any bucolic after fifty years. Chaucer's English, Milton's English, or Oxford English, would then take their place with Latin, Welsh, or Chemical formulae as accomplishments for antiquarian, literary, local, scientific, or polite society, and the business of international communication might leap forward a thousand years.

VERBAL FORMS AND FUNCTIONS

In Relation to Cassirer's Philosophy of Symbolic Forms

By FRANK HAWLEY

I

E. Cassirer's contributions to general linguistic and mythology (1922, 1923, 1925, 1925 *a*) appear to be little known or at least to have received as yet little attention in this country. Apart from a notice due to W. E. Collinson (1926), where we find a useful exposition of Cassirer's views on the psychology of myths, there is, it seems, nothing in the existing English literature of these subjects except such brief references as those given by J. Vendryes (1925), E. Sapir (1926), etc. Furthermore, in their recent work on general linguistic O. Jespersen (1924) and Father W. Schmidt (1926) nowhere make any mention of Cassirer's studies, in spite of the fact that though their respective lines of approach do not coincide, these three authors are all in some measure concerned with the same problems[1].

[1] It is quite impossible to give here even the most summary account of the attempts of previous philosophers and linguists to cope with the problems that arise from a consideration of the immense diversity of grammatical categories to be found in the languages of the world. The following brief indications of what *inter alia* such an account would involve may, however, be allowed and prove useful to the reader not fully conversant with the history of linguistic science: study of the glottogonic speculations of the philosophers of the 17th and 18th centuries and of their attempts at creating apriorically new universal languages and "universal grammars" (Descartes, Leibniz, Locke, Hobbes, Harris, Condillac, Cabanis, Destutt de Tracy, Monboddo, Vico, Diderot, Hamann, Herder, etc.); Leibniz' work in furthering the scientific study of language by insisting on the imperious necessity of accumulating linguistic *facts*; results of his endeavours, work of Pallas (1786-1789, 2 cd. ed., due to Jankiewitsch, 1790-1791), Hervás (series of works in Italian from 1785 to 1787, as well as some forty separate grammars, and finally his *magnum opus* in Spanish, 1800-1805), the two Adelungs and J. S. Vater (1806-1817), A. J. von Krusenstern (1813), A. Balbi (1826), etc.; the comparative work of the 18th century Finno-ugrists, J. von Strahlenberg (1730), J. Saijnovic (1770), S. Gyarmathi (1790), P. Beregszászi (1796), etc., not to speak of the still earlier founders of comparative Semitic grammar, Buxtorf, Ludolf, Castel, Guichard, Hottlinger, Schultens, etc., all this work having the effect of focusing attention on the extreme diversity of grammatical categories; the profound and epoch-making studies of W. von Humboldt (particularly 1836-1840), whom Cassirer (1923, p. vi) regards as almost his only predecessor; the interpreters of Humboldt and workers in the same field, H. Steinthal (1848 ff.), A. Fr. Pott (1876), Fr. Misteli (1893), etc.; those two 19th century

For the present article I have been asked to put together in an abbreviated and easily accessible form what Cassirer in his book on Language (1923) has to say respecting the forms and functions of the Verb.—*Die Philosophie der symbolischen Formen*, as Cassirer styles his synthesis, will ultimately comprise three volumes devoted to Language, Mythico-religious Thought and Scientific Thought respectively. In the first two volumes the author is not in any way concerned, as in his earlier work, with epistemology proper: he is endeavouring to determine the fundamental modes of understanding the world (*die Grundformen des "Verstehens" der Welt*) and, by separating one sharply from the other and defining the peculiar nature and tendency of each, to construct, as it were, a morphology of the mind (*eine "Formenlehre" des Geistes*), which would, he hopes, lead to new results in each of the separate sciences, linguistic, mythology, history of religion, etc., concerned with the study of man's psychic development. He admits that subjectivity is not absent from scientific thought, but holds that it becomes most manifest in the phenomenology of the linguistic form (*die sprachliche Form*) and of mythico-religious thought. He is firmly convinced that like all the main psychic functions language can be adequately comprehended only from the standpoint of a philosophical idealism: the reader, knowing how great is the uncertainty and confusion to-day in the field of general linguistic and how much of this uncertainty and confusion is due to the efforts of men with preconceived systems, will realize beforehand just to what obscurities Cassirer will be led. Of this much will be found in the following pages.

Lack of space prevents me from giving an account of anything more than what Cassirer has to say about the Verb and even here all detailed criticism must be omitted. But there is one consideration of fundamental importance that cannot be neglected even in this sketch. In the *Preface* of Vol. II of his book the author says it might be considered hazardous and even paradoxical, in the present state of knowledge, to attempt as he has done a "*Kritik des mythischen Bewusstseins*": since Kant, the term "critique" implies that there exists *in fact*, not merely in the realm of philosophical

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linguists who sought to obtain a universal knowledge of grammatical categories, J. Bryne (1885, 1892[2]), G. von der Gabelentz (1891, 1901[2]); R. G. Latham (1862), Fr. Müller (1876 ff.) F. N. Finck (1909, 1910), successors of Hervás; R. de la Grasserie (*cf.* for a complete list of his writings his own *Bibliographie des oeuvres . . .*, 1914), A. Trombetti (1902 ff.), and all those who have occupied themselves with comparative syntactical work extending over wide fields; finally, all the ethnologists, grammarians, psychologists, sociologists and philosophers who in any way have contributed to the elucidation of the problems with which Cassirer and contemporary workers are concerned. The literature of this subject is already extensive and will be incorporated in a *Critical bibliography of general linguistic* which I have in preparation.

speculation, something which can be examined, something to which criticism can be turned. One has little difficulty in determining the existence of a mythic consciousness or apprehension, or at least in recognizing that discursive, non-verbalistic thought takes a very different view of the world than does savage or " primitive " thought. But when we come to language, we have to do with a very different matter, and there is no justification at all for the philosophical schema in which all languages, past and present, viewed in the aggregate, are regarded as constituting a single and uniform mode of understanding the world. Even if it were certain that with a linguistic structure differing very much from that of our great languages of civilization went hand in hand a *correspondingly* different mentality, the immense diversity of grammatical categories would inevitably preclude the possibility of considering the totality of human languages as constituting a single symbolic form, except for those who, enamoured of *Systeme* and *Gesamtpläne*, of abstraction and hypostatization, have allowed themselves to fall into " le plus grand dérèglement de l'esprit ", namely " croire les choses parce qu'on veut qu'elles soient."

II

In the section devoted to the linguistic expression of space and spatial relations[1], Cassirer, having pointed out (pp. 147-148) that it is the idea of space that is most evident in the general locutions which language uses to designate intellectual processes (*e.g.* German [Grimm, *Wb.*, I, col. 1307]—the reader will at once recall other instances—), adds that in many native languages a large number of distinctions which we express in the verb are left entirely undesignated, while all modifications of place, position and distance are most carefully expressed by means of particles that originally had local signification (Kwakiutl [Boas, 1911], Klamath [Gatschet, 1890], Melanesian [Codrington, 1885]). All other distinctions—temporal, qualitative, modal—are of less moment than this spatial one, and the goal to which the action is directed is, for the native mentality, in close connection with the local destination of the action and with the direction in which this destination is reached : accordingly, the finalis or intentionalis of the verb is often formed by the

[1] In the following exposition, round brackets enclose names of languages from which Cassirer draws examples in support of his argument, square brackets names of authorities upon whom he relies.

Only the more important passages in Cassirer (1923) which deal with the Verb are included here. For example, I neglect as of secondary importance the *Lautbilder* of Ewe, each of which, descriptive of one activity, one state or one property, is used with one verb and one only [Westermann, 1907] ; affirmative and negative verbal forms distinguished only by tonic differences (Gola [*idem*, 1921]) ; reduplication and its uses, etc.

addition of particles properly or originally used in a local sense (Sudanic languages [Westermann, 1911], Gola[1] [*idem*, 1921]).

In this same section Cassirer, occupied with the linguistic expression of direction and directional distinctions (pp. 161-164), observes that just as there are local substantives (*Raumsubstantiva*), so in many languages there exist local verbs (*Raumverba*) used to express relations which we are accustomed to express through prepositions. Humboldt, who showed (1836-1840) that Javanese possessed such verbs, was of the opinion that in comparison with local substantives the use of these local verbs was indicative of a more delicate *Sprachsinn*: according to him, the rendering of relations by means of words denoting action (*i.e.* verbs) and consequently not evoking in the consciousness any concrete concepts belongs to a superior form of linguistic expression than does the rendering of such relations by means of substantives, which are the symbols of, and indissolubly associated with, concrete concepts. With this untenable view Cassirer appears to be able to find himself in agreement.— While in native languages it is often designations of parts of the body that serve to express such spatial relations as "up", "down", "aside", "in front", etc. (Mande languages [Steinthal, 1867]; Sudanic languages [Westermann, 1911]; Egyptian [Erman[2], 1911], Coptic [Steindorff[2], 1904]; etc.), here, in the case of local verbs, designations of bodily movements are made tributary; furthermore, according to our author, in individual languages where both local substantives and verbs are to be found (Melanesian [Codrington, 1885] *only*), the history of the language shows that the local verbs are of later formation than the corresponding substantives. Through the choice of a particular verb the nature and direction of the motion are specified; and in a weakened form these verbs may become local particles or morphemes modifying the complex, verbal or nominal, with which they are connected (Athapascan [Goddard *apud* Boas, 1911], Haida [Swanton, *ib.*], Tsimshian [Boas, *ib.*]—but the reader should note that the authorities cited are far from being perfectly sure as to what was the origin of these particles). There are languages which in the matter of these local forms incline more to nominal than to verbal expression or *vice versâ*; again, there are others which take up an intermediate position and seem to show mixed forms: such are the Sudanic languages [Westermann, 1911], where to express spatial relations use is made of local substantives, containing, however, in themselves a local verb denoting "sojourning in a place", this verb being employed to specify the activity that goes on in a given

[1] The position of this language is not yet satisfactorily determined, *Cf.* W. Schmidt (1926), pp. 92-113.

place. In Cassirer's view, it would seem that for the native consciousness a given form of activity is inseparable from its local existence, from the place where it is carried out, and that mere existence in a place constitutes a kind of active behaviour on the part of the subject in question: he point out that in Bantu and Sudanic, as well as in many Hamitic languages [Meinhof, 1912], a movement is characterized not by reference to its destination and result, but by reference to its beginning and local *point de départ.*

The section entitled "*Die Zeitvorstellung*" is one of the most interesting in the book and contains a great deal of information about the expression (or the not infrequent absence of expression) of time and temporal relations in different languages. But only the part devoted to verbal forms can be set out here. Relying upon the Sterns' indications on child-speech, where temporal adverbs are relatively late in developing and locutions like "yesterday", "to-day", "to-morrow" have no precise, clearly delimited meaning, as well as upon Roehl's account (1911) of Shambala, Cassirer explains that time must, in "primitive" thought, be conceived as a *thing*, and sees proof of this in the fact that temporal relations may be expressed by nouns originally of local signification (Melanesian [Codrington, 1885]). Many African languages possess the peculiarity that in them every process or activity must be divided into its constituent parts and each of these parts expressed in a separate sentence (Ewe [Westermann, 1907]; Sudanic languages [*idem*, 1911]; Nuba [Reinisch, 1879]). The totality of an action cannot be otherwise apperceived than in the literal presentation to the consciousness of all its constituent stages, and in the linguistic expression each of these stages, one after another, must be brought forward into the present.

Correspondingly, in many native languages we find a surprising wealth of "tense-forms": in Shambala, the indicative of the active alone shows over one thousand of these. But, in reality, as the grammarians themselves point out[1] [Roehl, 1911; Meinhof, 1906], these distinctions do not in the least designate temporal

[1] Then why do they call them *tense*-forms (*Tempusformen*)? —Throughout this paper I use almost the same grammatical terminology as Cassirer, this being the traditional and often extremely barbarous one. It is very lax: for example, I use "subject" indiscriminately of the individual performing an action,etc.,and of the subject of a sentence. Government Committees, Jespersen, Sonnenschein, Brunot and many others have laboured long and patiently on grammatical terminology: none has had much success or convinced his fellow workers.—"Aucun reclassement des phénomènes grammaticaux ne saurait échapper aux défauts inhérents à la classification d'Aristote. Les parties du discours ont fait leur temps. C'est une scolastique qui doit à son tour disparaître." Thus Brunot: yet one has only to turn over the pages of his massive book on Language (1922) to see that the old grammatical terms, in some instances slightly metamorphosed, and *a fortiori* Aristotle's

nuances: in Shambala the fundamental opposition of past and future has not been evolved, and these "tense-forms" are used to express qualitative and modal distinctions in respect of the action, the notion of time being something very accessory. (Examples of lack of development of tense-forms in our sense from Maya languages [Seler, 1887]; Bakairi [von. d. Steinen, 1892]). And when language first begins to use temporal expressions, we do not find expressed a series of moments in time—past, present, future—at one of which a given action is said to take place. What is actually expressed is whether an action takes place suddenly or is but slowly developed, whether it is completed in a single process or continues throughout a series of similar, rythmically repeated processes, and so on. We have to do with what grammatically is known as *aspect*. Languages differ very much in the stress they lay on the moment in time when an action takes place or on the duration and manner of the action. In our Indoeuropean languages there is a tripartite division: past, present and future, but in the Semitic languages the fundamental opposition is between perfect and imperfect verbal forms, between completed and incompleted action. Consequently, the perfect can be as easily used of the past as of the present, as when it denotes that an action that began in the past still continues into the present; conversely, the imperfect may express past, present or future, as when it is used of an action conceived as being in process but not yet completed [Brockelmann, 1907].

Even the Indoeuropean languages which have best succeeded in giving clear and full expression to time as a pure relational concept (*reine Relationsbegriff*) were in the oldest stages chiefly concerned with the expression of aspect [Streitberg, 1891]. In the conjugation of existing Indoeuropean languages many traces are still found of this earlier category.

In the section on "*Die sprachliche Entwicklung des Zahlbegriffs*", where Cassirer makes some very interesting remarks about primitive forms of enumeration, we find not a little respecting the Verb in this connection. As in the case of spatial relations, so too have numeral relations been differentiated and defined by reference to the body and its constituent parts, these serving the speaker as the standard by which all such relations are measured. And in general it is not sufficient to *refer* the objects counted to parts of the body, it is necessary also to accompany them by bodily movements, in order, as it were, to *convert* them into the correspond-

categories, much maligned though they are, die hard!—Every year the need is more and more felt for J. Marouzeau's *Lexique de la terminologie linguistique* (announced in Paris some fourteen years ago and still said to be in preparation) or for some similar critical work.

ing bodily parts. Numerals express momentary hand- or finger-positions and often arise out of verbal (particularly imperative) forms. So in Sotho [Meinhof, 1906] the word for "five" signifies literally "finish your hand", that for "six" "jump (*sc.* over to the other hand)"; in Eskimo [Thalbitzer *apud* Boas, 1911] "twenty" is expressed by means of the locution *inuk naa^{w} Longo*, "a man brought to an end", *i.e.*, all his fingers and toes have been counted. Still more striking is the fact that in certain languages objects are classified according to their position during the process of counting and the manner in which this is carried out, this classification finding formal expression in the choice of the verb: so in Klamath [Gatschet, 1890] certain objects when being counted must be arranged in heaps, others in rows, still others in layers, etc., and each of these arrangements of the objects is specifically expressed in speech by its own peculiar verbal numeral or numeral classifier used exclusively of this one arrangement.

In his study of the constituent elements of the category of number Cassirer comes to the conclusion (pp. 195-196) that the idea of plurality arose in two different ways: on the one hand, there were complexes of material objects, on the other, repetitions of certain events and activities linked one to another in continuous succession: of these different forms, savage consciousness, in different ways, gradually became aware. Klamath, for example, possesses no means of its own—or at least such means as exist are of very recent formation—of distinguishing between single objects and a plurality of objects, whereas in the matter of forms of activity numerous delicate distinctions, underlying the very structure of the language, extending to postpositions and certain adverbial particles, are constantly made. Whether a given action is instantaneous, or consists in a repetition of identical processes, must always be expressed in the Klamath verb. Again, Hupa [Goddard *apud* Boas, 1911], in cases where we should use a plural form as of a number of people dancing, shows the singular: though the action is performed by several individuals, these are regarded in this connection as forming a unit. Contrarily, in many languages (apart from the Amerindian languages, also Nuba [Reinisch, 1879]; Kiwai [Ray, 1907]; etc), plurality is expressed in the verb not, or not only, where there is a plurality of subjects, but where one and the same subject acts in the same way upon several objects. In this fact too Cassirer finds support for his view of how the idea of plurality originated: to judge from the structure of these languages, it is not the number of individuals participating in an action, but the form of the action, that is all important: by "form of the action" is meant the nature and extent of the action, in what way and upon what object or objects it has effect.

The fourth part of chap. III, "*Die Sprache und das Gebiet der 'inneren Anschauung'—Die Phasen des Ichbegriffs*," contains a good deal of that apriorical philosophical matter which could with advantage be omitted in an interpretation of the facts of native languages; but I will try to set forth as clearly as possible what Cassirer has to say about the Verb in its relation to the *Ichbegriff*.—It would be erroneous, in a consideration of man's psychic development, to regard, as certain child-psychologists have done, the period when the pronoun "I" is first formally employed by the child as being the *point de départ* of the child's consciousness of itself. The psychic content (*der innere seelisch-geistige Gehalt*) and the mode of linguistic expression available are never quite on the same plane, and language has at its disposal a wealth of means of which it makes full use to express "self." This is not restricted to the pronoun, but is fully expressed through the medium of the noun and more particularly the verb, the latter serving to render all shades of personal feeling: it is for this reason, Cassirer holds, that the Chinese grammarians [G. von der Gabelentz, 1881] distinguish verbs and nouns as "living" and "dead" words respectively. But in many languages the distinction between self and not-self is carried a step further than is possible in the above-mentioned instances of ordinary pronominal, nominal or verbal expression: in almost all languages where a system of nominal classification is in existence (as in Bantu), two very definite, mutually opposed classes, that of persons and that of things, have been developed. Kinds and degrees of personality according to the function of the individual are recognized in these languages, as when a person acting for himself is ranged in one class, one acting on behalf of another, in a different class [Meinhof, 1906]. Furthermore, by means of special prefixes, certain languages (Bugis [Brandstetter, 1911], Melanesian [Codrington, 1885], etc.) make distinctions in the verb according as the event expressed by the verb merely happens spontaneously, is conditioned by the purposive, volitional behaviour of the subject, or by the joint action of several such subjects.

The voices of the verb next claim Cassirer's attention. From the standpoint of purely logical analysis there is, in Cassirer's opinion, only one distinction to be made: voluntary "doing" as opposed to "suffering", the active as against the passive form of the verb. Aristotelian analysis had already endeavoured to raise this grammatical distinction to the rank of a logical category: the fundamental opposition of ποιεῖν and πάσχειν Cassirer defends (p. 214, but *cf.* p. 66, where a view nearer to the one usually accepted by students of this question seems to be held)

against the attacks levelled at it by Trendelenburg (1833, 1846) and, in our own days, Mauthner, Gomperz, Brunot[1] and others, who hold that Aristotle's system of categories is wholly dependent upon the accidents of the Greek language: in Greek the passive is neither morphologically nor semasiologically sharply distinguished from the other voices of the verb, and in fact [Brugmann, *Griechische Grammatik*[3], 1900, pp. 458 ff.] it was developed partly out of the active, partly out of the middle. Moreover, if we examine a number of structurally different languages we find that the opposition of doing and suffering is only one of a series of oppositions formally expressed in these languages. Again, there are languages which offer no passive forms at all, using instead certain active forms, particularly of the third person plural (amongst others, Melanesian [Codrington, 1885]; Sudanic [Westermann, 1911]; Japanese [Hoffmann, 1877]). In Malay [Humboldt, 1836-1840] the so-called passive voice is in reality a nominal form: the verb, which is itself not regarded as in any way active, merely states that a certain action is carried out, without formally connecting it either with the subject that performs it or the object to which it is directed. But it is not to be supposed that absence in the conjugation of any well defined opposition between active and passive, between doing and suffering by any means signifies that the most delicate nuances of activity are not recognized and clearly expressed. Most important in this connection is the grammatical category of *aspect*, which serves to express, not the moment in time when an action takes place, but the duration of the action and the manner in which it is carried out, whether at the moment of speaking it is just beginning, is still going on, has reached its term, is single or repeated, is limited to a given moment or continuous over a long period of time. Accordingly, we find (Hamitic [Reinisch and Hanoteau]) stative, inchoative, cessative, habitualis forms serving to indicate just how the action is conceived. In other languages (Finno-ugrian [Szinnyei, 1910, Simonyi, 1907]) chief stress is laid upon the distinction between momentary and frequentative verbs, and an elaborate suffix-system in this respect has been developed. Side by side with these distinctions referring more or less to the objective aspect of the action, the attitude which the subject takes up in this matter can also be

[1] F. Brunot's work has most interest and importance for the general linguist. Apart from his huge book, *La pensée et la langue*, 2 ed. ed., Paris, 1926 (dated 1927), there is an interesting article, which on its appearance occasioned much controversy, entitled "Le renouvellement nécessaire des méthodes grammaticales", *Revue universitaire* XXIX, 2: for a vigorous critique, from the pen of a linguist, *cf.* G. Millardet, *Linguistique et dialectologie romanes*, Montpellier and Paris, 1923, pp. 427-465.

explicitly expressed in the verb: the action can be qualified as desired or demanded, asserted as true or merely problematic, and to this effect are used the subjunctive and optative[1] moods. In addition to an imperative, some languages (Mongolian [I. J. Schmidt, 1831]; Sanskrit [Thumb, 1905]) possess a precative, and amongst the Amerindian languages we find an imperative, implorative, desiderative and obligative mood, as well as a dubitative and quotative, used when the action is doubtful or known only by hearsay. Still finer precisions occur as when (Athapascan [Goddard *apud* Boas, 1911], Haida [Swanton, *ib.*], Kwakiutl [Boas, *ib.*]) in describing an event, the subject, by using a special verbal suffix, makes it clear whether he saw the action he reports, whether he heard it, or whether he merely deduced from certain evidence that the action must have taken place.

The opposition between self and the external world, already apparent in the linguistic phenomena discussed above, becomes still more marked when we turn to a consideration of the effect or influence the subject exercises on the object and the different forms this effect may take. Many languages which for the most part ignore the opposition of active and passive make in this matter the sharpest distinctions; and from a single, originally intransitive verbal stem can be derived by means of various morphemes (*e.g.* the consonantic gemination of the Semitic languages) two or more transitive verbs of intensive or causative signification (Turkish [Aug. Müller, 1885]; Semitic [Brockelmann, 1908], with special reference to Ethiopian [Dillmann, 1857]). In this Cassirer sees an intensification (*Potenzierung*) of the personal element: we have no longer to do with a simple nexus between subject and object, for these two are now in relation through the intermediary of one or more other subjects, and it is the latter that are concerned with the actual accomplishment of the action in question. This duality or plurality of the subjects can, moreover, be otherwise expressed in the verb: use is made of a cooperative form or a cooperative or "social" stem indicating that a certain person is in some way or other involved in the same action or state as another (Yakut [Böhtlingk, 1851]; Bedauye [Reinisch, 1893]). Further distinctions are made in certain languages by the use of collective infixes (language of Taoripi (?) [Ray, *Reports of Cambr. Anthr. Exp. to Torres Straits*, III, 1907]), and, finally, we have reciprocal, reflexive and medial forms. Even primitive languages[2] (Bungandity (?)

[1] As far as the Indoeuropean languages are concerned, this mood is chiefly used in their older stages.

[2] In Cassirer's sentence "Auch primitive Sprachen unterscheiden gelgentlich scharf, . . .", "auch" has no pertinence outside the bounds of the author's metaphysical system. In the whole of the preceding (and following)

in South Australia [Matthews, *J. Pr. R. S. New South Wales* XXXVII, 1903]) occasionally make a sharp distinction according as the activity of the subjects is directed towards themselves or towards something external. From the reciprocal activity-phase we pass by a natural transition to the reflexive, in which the individual acts not upon someone or something else, but upon himself; and it is precisely the reflexive form that in many languages (among Semitic languages, Ethiopian [Dillmann, 1857], Syriac [Nöldeke[2], 1898]; Turkish [Müller, 1885]) replaces the missing passive. The strong consciousness of subjectivity present when the individual acts upon himself becomes most manifest in the use Greek makes of middle forms; and referring to J. Stenzel's well-known essay (1921) on the influence of Greek upon philosophic thought, Cassirer would apparently see in the use of middle forms an essential and distinguishing characteristic of the Greek language, stamping it as genuinely "philosophical" (*der sie zur echt "philosophischen" Sprache stempelt*). If, lastly, we consider how numerous are the distinctions of voice in the verb, and how these voices can often be combined to form new ones, causative-passive, reflexive-causative, etc. (apart from Semitic, also Turkish, Nuba and Yakut), we see that in language the opposition of subjective and objective is a dynamic one, and realizes the unceasing and ever changing reactions of the individual and the external world.

Finally, in the last section of chap. III, Cassirer discusses the question so often raised in the history of linguistic: was language in its origins (the *Urworte*) of verbal or of nominal character? After giving a brief account of the theories of previous students of this problem, Humboldt, Noiré (1877), Max Müller (1888), Wundt (1900), Delbrück (1901), de la Grasserie (1914), he points out that as was to be expected it is impossible to settle the matter merely by apriorical speculation. We must restrict ourselves to an examination of the actual linguistic data at our disposal. If we examine the grammatical categories and processes of a number of different languages, we find that the parts of speech that we are accustomed to call substantive, adjective, pronoun, verb, etc., cannot have been present in the initial stages of these languages,

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account of Cassirer (1923), chap. III, "*Die Sprache in der Phase des anschaulichen Ausdrucks*," I have been compelled to write down, in setting forth Cassirer's views, much that I consider as mere pseudo-philosophical analysis of language, reminiscent of scholastic controversy on the *verbum substantivum* and similar themes: I am far from denying Cassirer's merits in certain directions (of this more *infra*), but I would point out here that I do not *necessarily* agree with any of his theses, though usually I refrain from all detailed criticism of them.—I would refer the reader to an interesting essay by E. Naville, entitled "La méthode scolastique dans la science du langage", *Scientia* (1913).

or at least cannot have been either morphologically or semasiologically sharply differentiated : the further back we go in the history of language, the more do we find undifferentiated entities fulfilling the most diverse functions. It is only through the advance in symbolization and the sharper distinction of the contents of consciousness that we reach the stage where " objects " as against " properties ", " persons " as against " things" and other similar oppositions are recognized and formally expressed.

Particularly marked in this respect is the lack of distinction between noun and verb, and it appears that only the Indoeuropean and Semitic languages have succeeded in satisfactorily separating the forms and functions of the two. And even within these speech-families there is not always a well-defined boundary between nominal and verbal sentences (Syriac [Nöldeke², 1898]). In the Malay languages [Humboldt, 1836-1840] there is so little distinction between the two types of expression that one feels, as it were, the verb to be absent. Again, instead of verb and noun, we find in many languages what might be called an intermediate " amorphous " form (Hottentot ; Mande languages ; Samoyed ; Yeniseï-Ostyak [Fr. Müller, 1876]) : from this we see that only gradually have been evolved the formal distinctions between nominal and verbal expression. Wherever languages favour the type of " possessive conjugation " (" Uralo-Altaic " [H. Winkler, 1908]) there is complete parallelism between conjugation and declension. Elsewhere, one and the same system of morphemes is employed both in respect of adjectives and verbs (various examples of these usages from Malay [Humboldt, 1836-1840] ; Coptic [Steindorff², 1904] ; Yeniseï-Ostyak ; Dravidian [Fr. Müller, 1876]).

Follow several pages in which Cassirer proceeds to discuss the various fundamental types of category-systems to be found in the languages of the world : here perhaps more than elsewhere he is seen to be enslaved by his system, and the discussion may for our purposes be neglected. He arrives at no conclusion respecting the problem raised at the beginning of the section : like so many other of the themes so ardently discussed by general linguists and such philosophers and psychologists as have been interested in language, it is impossible, in the present state of our knowledge, to solve the problem, if indeed the problem exist.

III

The reader will have been able to form from the above exposition some idea of Cassirer's method and of the positions he takes up on certain linguistic phenomena. I add here a few general considerations on his work.

In the first place, his sources and the use he makes of them. The non-specialist reader may think that his documentation is fairly complete. This is far from being the case. Often, both in his materials and in his theses, he is not in advance of Humboldt, as will have been seen from the many instances where he relies exclusively upon the latter for his documentation. The Palaeo-asiatic languages of N.E. Siberia and the Caucasic languages are completely ignored ; for many other important languages the only references are to Fr. Müller's *Grundriss* (1876 ff.) : so Dravidian, Yeniseï-Ostyak, Samoyed, etc. In the matter of African languages, which together with the Amerindian languages are his chief source, the very important studies of M. Delafosse, N. W. Thomas, A. Drexel have not been utilized, though the work of these scholars has opened a new era in the morphologic and genetic study of African speech-families. As far as Altaic is concerned, he relies upon the older works of I. J. Schmidt (1831) and J. Grunzel (1895) and upon the comparative work of H. Winkler (particularly 1908) : the latter scholar, though extremely learned, is much given to premature etymological and glottogonic speculations and could not be relied upon for the exact and detailed account of the structure of Altaic that Cassirer needed. If, either on account of the language in which they are written or of their comparative scarcity[1], the works of the great Russian students of Altaic, A. D. Rudnev, M. Melioranskiï, B. Y. Vladimircov, etc., were inaccessible to Cassirer in Hamburg, the German publications of the Finnish Mongolist G. J. Ramstedt must have been easily obtainable, and they are perhaps the most important contribution yet made to the study of Mongolian morphology. Cassirer's section on "*Der nominale und der verbale Typus des Sprachausdrucks*" would have benefited from a study of Ramstedt's work on what he calls *converba*, *nomina verbalia* and *verba finita*. Again, for Turkish, apart from the work of W. Bang, J. Deny's great *Grammaire de la langue turque*, Paris, 1921, had already been published for two years : the author's analysis of Turkish morphology, where he seeks to avoid "le défaut de conserver dans l'étude du turc les habitudes et procédés d'exposition des grammaires françaises ou latines," is indubitably the best in existence. Such instances could be multiplied. In very many cases, Cassirer has not taken into consideration at all the latest investigations, and yet unless his theories are based upon full and accurate knowledge of linguistic facts, they are of necessity foredoomed.

But the most serious criticism that can be made against his work

[1] On the rarity of Russian books in Germany, *cf.* K. H. Meyer, *Historische Grammatik der russischen Sprache*, I, Bonn, 1923, p. iii.

is that he is less concerned with examining and endeavouring to interpret linguistic phenomena than with fitting language into the framework of his preconceived system. From an examination of a relatively limited number of linguistic facts concerning, say, the Kwakiutl language of Vancouver Island, he feels himself justified in asserting that the mental processes of the Kwakiutl people are characterized by such and such a tendency: he is making from a study of grammatical categories deductions concerning the mentality of the speakers, and in this he is entirely without justification. Grammatical categories do not necessarily tell us anything about mental processes, about *Weltanschauungen*: to say the least, man's psychic activity is in advance of the linguistic means of expression at his disposal. Again, for the most part, he entirely ignores the factor of historical evolution in the establishment of existing grammatical categories. According to B. Malinowski (1923), a given linguistic phenomenon in a native language cannot be properly understood apart from its context of situation, and in this matter, the sketches of the *H.A.I.L.*, excellent though they are, give but little information. In his mind Cassirer would seem to have already constructed a schema of man's psychic development, with all the various stages filled in: the facts in support of this schema he seeks in diverse languages, and not infrequently the result is a *petitio principii* or *non sequitur*. Elsewhere, his metaphysical bias leads him into verbalism, as in the forty pages where he analyses the phases and reactions of subjectivity and objectivity in linguistic expression.

But Cassirer's work has undoubtedly its merits. As far as I am aware, it is the first attempt, in the 20th century, at composing a treatise on general linguistic that comprehends a relatively large number of native languages and compares and seeks to interpret grammatical categories on a large scale. Sapir's book (1921) deals for the most part only with Amerindian languages and, unlike Cassirer's, is entirely without bibliographical references. Misguided as Cassirer's theories and interpretations must often seem to anyone concerned more with native languages than with philosophical idealism, all linguists cannot but welcome this book written by a philosopher enjoying considerable linguistic erudition and courageously striving to cope with problems which they for the most part —in England at least—have neglected to face.[1]

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[1] For a study of native mentality as well as of native languages I would refer the reader to a recent book by O. Leroy (1927). Though primarily concerned with the prelogistic theories of L. Lévy-Bruhl, which the author seeks to refute, the book throughout contains many sober and judicious remarks on all problems of native mentality.

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MATERIALISM, VITALISM AND PSYCHOLOGY

By W. M. MARSTON

Lecturer in Psychology at Columbia University

What are the underlying desires, or wishes, that lead some scientists to insist upon mechanistic conceptions, and others equally eminent, to espouse some form of scientific vitalism?[1] For in psychology as in other sciences, a materialistic or vitalistic bias may be found at the root of nearly all factional schools, or contentious groups. Sometimes, of course, the underlying desire relates solely to the advancement of the personal fortunes of the workers concerned; and such purely egoistic motives probably play a considerable part in the evolution of every scientific doctrine. In addition to this, however, originators and promulgators of conceptual systems of thought nearly always possess hidden desires to push science in this direction or that, " for science's own sake ". The goal selected is the one that accords most closely with the basic emotional set of the scientific agitator. And the emotional sets of scientists may be classified, broadly, into two elementary groups, materialistic and vitalistic.

The Mechanistic Set

Mechanists are " hard-boiled ". They are chronic sceptics, and must be shown. They pretend to base all their conclusions upon material evidence, and seldom observe that their own aggressive disbeliefs in the existence of this or that are based upon temperamental rejection of the very proffered evidence which their creed holds sacred. Their rationalization of their own emotional bias runs something like this: Science is the study and exposition of material causation. " Material " means always " cruder, less complex forms of energy ". Therefore, true science is the study of the influence of simpler energy units upon more complex energy units. And, since we can account for everything we have ever experienced in this way, why waste time imagining that there exists any other type of cause or causation? The mechanistic

[1] The present article will form part of Dr. Marston's forthcoming work on *The Emotions of Normal People* in the International Library of Psychology.

doctrine is pithy, succinct, and easily understood. Like the emotional set of its adherents, the mechanistic doctrine is aggressive, self-assured, and makes for rapid and decisive action. Scientific results, like other types of reward, are attended by action. Materialism, therefore, has proved itself a very useful agent in turning man's intellect from arm-chair speculation, to laboratory research.

The Vitalistic Set

Vitalism seems to associate itself very intimately with religion, and religion might be defined as an emotional police force for morals. The vitalist's basic emotional set is subtler, more complex, and harder to define than is that of the materialist. It seeks a more ultimate good for the self, and, at the same time, desires opportunity to dispense loftier cheer to others. If mere physical fact interferes, at any point, with vitalism's sacred purposes, then escape is taken to the heights of imagination, where no physical facts exist. Nor do these occasional excursions prove wholly futile. Often the fugitive from reality returns to earth with new and usable inspiration. Physical facts frequently turn out to be chameleons, changing to richer and more varied colours under more vivid illumination.

In rationalizing his underlying desires for science, the vitalist remains true to form, starts with a priori assumptions, and ultimately descends to facts. He assumes, to begin with, that physical phenomena cannot adequately be accounted for as mere results of physical causes. Therefore, it seems, we must further assume the existence of a first cause, or super-physical influence of unknown attributes. Granting the existence of such an ultra-material agent, it is easy to assert that " He " produces, emanates, or *is* physical consciousness. From this point on, the vitalist descends into the same world with the materialist. Only, vitalistic causation proceeds in an opposite direction. Consciousness is a more complex, more ultimate form of being than is organic matter ; which, in turn, is more complex and potent than are inorganic energy units. Complex energy forms are regarded by the vitalist as more compelling than the cruder units. It is held, therefore, that higher energy units are the causes, and that simpler energy units are effects. " God made man in His own image ", and set him to rule over the beasts of the field. The beasts, in turn, rule the vegetables, and so on down the line. Science is conceived of by the vitalist as a study and description of the causal influences of the higher upon the lower, the more complex upon the simpler, the more conscious upon the less animate. This doctrine is utterly repellant to many scientists, because it bases itself, initially, upon sheer, unproved

assumption, and because, with equal naivitè, it ignores countless instances, appearing in every day life, where determinative influences are exercised by cruder forms of matter upon human consciousness itself, which the vitalist regards as the highest known form of energy.

Existence of Mechanistic-Type Causes and Vitalistic-Type Causes

On the other hand, physical scientists who desire, unselfconsciously, to uplift their fellow humans, endure with difficulty the thought that the destiny of mankind rests supinely in the power of the unbound electron. Mechanistic determinism is abhored just as wholeheartedly by many a man of letters who sees no logical escape from its tentacles, as it is by " fundamentalist " preachers who see in the triumph of materialism a prospective loss of their own bread and butter. Most dreaded of all mechanistic tenets, apparently, is Darwinian evolution. That monkey has made man is his own image is felt to be a degrading thought. Why? Because such a conclusion is taken to mean that man, once made, continues to be controlled by the same elementary forces which originally produced him. But biological evolution, even if true, entails no such implications. Monkey (or the common ancestor), may have caused man to evolve into his present form ; but man, on the other hand, can now create new types of monkey, at will, by exercising a controlling influence over their breeding habits. And this is the very type of causation idealized by the vitalists. Man, the complex, sets causes in motion which influence the nature of monkey, the simpler animal. Moreover, while the materialistic supposition that monkey originally created man is beyond our present powers of verification, the influence exercised by man over monkey can be observed, any day, in the laboratory. In this argument, at least, we must concede that the vitalists' variety of causation is more solidly upheld by facts than is the mechanistic type of cause raised by materialists to epic grandeur in the saga of biological evolution. We must admit that while the vitalists begin their theorizing with fictional flights, the materialists conclude their doctrines with an almost equally speculative sublimation of their underlying emotional set. Also, in justice to both, it may be said that the vitalistic account of causation is just as much an accurate observation of physical fact, as is the mechanistic account. Simpler energy units constantly influence more complex units, and may, under favourable conditions, control their behaviour, while more intricate assemblages of force, by virtue of new attributes derived from their complexity, as constantly compel compliance

from cruder types of matter, and do, under our very eyes, com pletely regulate the simpler energy forms.

Physical science must and does include both mechanistic and vitalistic types of causation.

Science Must Describe Both Types of Causes

We do not know as a matter of actual obversation how organic forms of energy originate. We do know, however, that such energy units exist, and that any life-possessing unit exercises spontaneous influences over inorganic matter throughout its life span. These influences are in every sense vitalistic-type causes. Even inorganic matter may spontaneously generate causes of this same type. Radio-active metals, for instance, emanate energy particles regardless of the nature of the environment in which these emanations take place. Physical science, without doubt, is held accountable for a full description of the phenomena.

At the same time, life-possessing units of matter, such as plants and animals, are constantly undergoing modification as a result of stimuli which impinge upon their organisms from the less complex material units of their environment. Simple, but intensely energized forces like wind or waves may destroy plant or animal organisms altogether; or such forces may influence in conclusive manner the growth or movements of the more complex animal and plant organisms. In the case of inorganic matter, acids or single chemical elements, vastly less complex in themselves than the radio active metals, may attack and destroy the latter, or may hasten or retard the radio activity. These are mechanistic-type causes acting determinatively upon energy units more complex than themselves.

Interaction of Mechanistic-Type and Vitalistic-Type Causes

In addition to such wholly separable types of causation, science has still to deal with the interaction of vitalistic and mechanistic causes. It is in the discussion of influences interacting between complex and simple energy units that the greatest confusions and conflicts of scientific analysis arise. For instance, let us suppose that science is called upon to describe the plant growing in a field. It can be shown definitely that the soil is delivering a continuous series of chemical stimuli to the plant. It is equally ascertainable that the plant reacts to these stimuli with a series of reactions peculiar to its own inherent nature. Some of these plant responses will result in the delivery of counter stimuli to the soil and some will not. Those influences which are exercised by the plant over the soil will, for the most part, alter the soil in ways determined

by the chemical power of the plant. In so far, therefore, as soil and plant interchange influences it may fairly be said that the more complex units of energy composing the plant will dominate the interplay of causal forces.

But, as we have noted, there will be many changes in the plant, as a result of reactions to soil stimuli, which will not direct any influence back toward the earth. Were these plant changes directed by the soil to its own ultimate benefit, then we might clearly assume that the simpler form of energy was in causal control of the more complex energy unit. That is to say, if the soil were able to use the more complex energy of the plant to effect its own enlargement, simply by stimulating the plant to act according to the plant's own principles of action, we might conclude that, after all, the balance of control lay with the simpler unit of energy. This would amount to philosophical admission that mechanistic causation holds the balance of power. But such does not appear to be the case. Though stimulated to action by the soil, the plant reacts with its own energy according to its own innate principles of action, and with reaction tendencies designed for its own ultimate benefit. With innate power to develop spontaneously throughout its own life cycle, with a balance of power of interaction capable of changing the soil more radically than the soil can change it, and, finally, with a structure designed in such a way as always to react for its own benefit when stimulated to action by the soil, we are forced to conclude that the plant is a more potent generator of effective causes than is the soil. In short, a close logical analysis of influences interacting between complex and simple energy units would seem to show that the responses of the simpler unit are dependent to a greater extent upon the causal control of the more complex form of matter, than are the reactions of the latter upon the former. If a balance is to be struck, then, upon the basis of empirical obversation, between vitalistic and mechanistic types of causation, we should be obliged to concede to the vitalistic causes the final balance of power. But science is not called upon to strike any such balance ; it is merely required to describe both types of causation, neglecting neither the one nor the other

Complex Matter-Units Possess Greatest Causal Power

In the large, we may put the matter somewhat as follows. Science finds, in this world, units of energy of varying complexity. It finds that the complex units are capable of exerting spontaneous influences upon the simpler units, and vice versa. It finds that simple and complex units customarily interact, each causing changes in the other. The balance of power, on the whole, in this inter-

change of causal influences, lies with the more complex energy accretions. Even supposing, by way of illustration, that lead was once responsible for the evolution of uranium, it seems now the fact that radio-active metal can create lead under our own observation ; while lead, if it still possesses evolutionary power, manifests it in too small a degree to be detected with available instruments. Perhaps inorganic compounds, millions of years ago, evolved plant structures. But now, at least, vegetable growths alter the entire composition of their nurturing soils, in the course of a few seasons ; while the ability of the chemical influence of the soil to change the fundamental characteristics of plant life is extremely uncertain. Monkey-like primates may have given rise, in the long ago, to genus homo. But there is now little comparison between the influence that man is capable of exerting over ape behaviour, and that which monkeys may bring to bear upon man. It seems to be a principle of nature that *once a more complex form of energy appears, it forthwith possesses greater causal power over simpler forms of energy than the simpler forms possess over it.*

But the mere fact that a quantitative majority of causations are of vitalistic type, does not in the least mean that science can neglect the huge, coexisting volume of mechanistic-type causations. Both aspects of causal description are required in all sciences. In physics, for example, which seeks to describe the most ultimate, or elementary reaction tendencies of matter, the attempt is now being made to resolve all complex masses into ultra-simple proton and ion systems. The influence of each proton-ion microcosm, then, must be traced in its most far-reaching effects upon the physical behaviour of the macrocosmic mass of which it forms a single unit. The causal influences of the total mass, on the other hand, upon its constituent proton-ion systems, and upon other, free-lance proton-ion systems, must be described.

Chemistry, starting with already complex units of matter, the atom and the molecule, seeks to describe the causal effects of atoms upon molecules, and of molecules upon their constituent atoms, and upon other atoms, free or in other molecular systems of combination. Complexly organized groups of molecules also are studied by chemistry, which attempts to trace the influences which single molecules exercise upon organic and inorganic compounds, and the causal effects of such compounds upon the simpler, molecular units.

From chemistry we step over the border line between inorganic and organic matter into the field of the sciences which deal with living organisms. In botany an attempt is made to analyse plant structures into cellular units. The effects of these units, together

with the influences of still simpler inorganic units upon complex plant structures, is then considered. Slightly more important, perhaps, is the description of the manner in which plants utilize and react upon their environment. In the general science of biology, which serves as an introduction to the more highly specialized physiological sciences, it is interesting to note that animal organisms are classified into phyla, genera, and species, upon the basis of the type of action which each animal exerts upon its environment, rather than according to the effect which inorganic or vegetable environment exerts upon the animal. Both aspects of scientific description are important in biology, however, as we have seen them to be in other sciences.

With the advent of the highly specialized physiological sciences, we find a group of studies whose special object is analysis and description of the man himself. Animal organisms below the complexity level of man are, of course, constantly utilized in the physiological loboratory; but such animal subjects are studied in order to apply the knowledge thus gained to further understanding of man. In other words, the purpose of the physiological sciences has become frankly vitalistic as to type of causation emphasized. It is desired to know how man reacts upon and utilizes animals less complex than himself, as well as to learn the influences which he is able to wield over his vegetable and inorganic environments. This underlying purpose of the human scientist appears greatly to disturb mechanistic minded writers and investigators, and the repeated attempt is made to assert the equal scientific importance of animal and botanical results regardless of their ultimate bearing upon analyses of man's own creative tendencies. Similarly, attempts are frankly made by materialistically biassed persons to assert that man's behaviour is determined in its entirety by the influences exerted upon it by units of energy simpler than man himself.

The truth of this assertion may be tested by examination of the nature of the nervous impulses by which, it is generally conceded, man's bodily conduct is initiated and controlled. Nerve impulses were formerly thought of as electrical disturbances. The energy travelling along a given nerve was conceived of as an outside force imposed upon the nerve by an environmental or physiological stimulus; that is, by a stimulus less complex in energy osganization than the nerve itself. Neurologists have subsequently discovered, however, that the nature of a nervous impulse is wholly dependent upon the potential energy already contained within the nerve fibre. A nervous impulse is now described as a series of explosions[1], depen-

[1]K. Lucas, *The Conduction of the Nerve Impulse*, London, 1917, p. 23.

[1]A. Forbes, "The Interpretation of Spinal Reflexes in Terms of Present Knowledge of Nerve Conduction", *Psy. Rev.*, vol. II, July, 1922, p. 367. "It

dent for their intensity and volume, not upon the intensity of the physical stimulus, but rather upon the intrinsic structure of the particular nerve fibre stimulated. The function of the physical stimulus is limited to an initial release of nervous energy accumulations more complex than itself. In no sense is the nervous impulse determined by, or causally dependent upon the less complex physical stimulus to which it responds, except in the single particular that the physical stimulus is responsible for the origin of the nervous impulse. Once the nervous impulse appears, it proceeds to operate on its own energy and according to its own rules of behaviour, like all other complex forms of energy. The mechanistic thinker assumes that causal responsibility for the origin of the more complex form of energy implies subsequent control of the more complex unit throughout its life span. Only if such continuous control were exercised by the simpler over the more complex could this world be regarded as uniformly mechanistic. As a matter of fact, however, the moment a more complex energy unit, such as the nervous impulse, is called into being, it forthwith assumes control of its own behaviour, and, to a considerable extent also, it exercises control over the behaviour of the stimulus energy unit.

The analysis of human emotions hereinafter set forth will, I trust, clearly show that man, the most complex of unit organisms, is similarly independent of, and influential over the environmental stimuli which initially call into being his responses.

Assignments of the Sciences

Psychology is the youngest and most undeveloped of the specialized, man-describing sciences. What is psychology's peculiar assignment? What especial group of energy units must psychology examine, both with respect to the influences exerted upon these units by simpler forms of matter, and with respect to manipulations of simpler forms by the units described by psychology? Psychology, as we have seen, undertakes to examine the effects of environment upon bodily tissues and organs. It also seeks to discover the actions of the organs themselves upon the various vegetable and mechanical forces of matter which they contact. Neurology, which is also a comparatively new branch of science, is particularly interested in the effects of bodily organs and tissues upon the net-work of neurons constituting the so-called nervous system.

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has been likened to the burning of a train of gunpowder, in contrast with the transmission of a sound wave whose energy comes entirely from its initiating source. This fact, now well established, should put an end to all efforts to explain the nerve impulse simply as a transient current of electricity conducted along the fibre on the same principle as in an insulated wire; the dynamics of the two modes of conduction are fundamentally different".

More particularly is neurology interested in the influences exerted by nervous impulses over the various organs and tissues of the body. Is there any stabilized form of energy more complex than the nervous impulse? The commonsense answer to this question is " Yes, Consciousness ".

Psychology's Assignment

Psychologists, neurologists, psycho-physiologists and possibly psycho-analysts substantially agree with this answer. All these types of investigators assume, either tacitly or explicitly, that consciousness is a manifestation of energy which exists and reacts as a unit separate from mere intra-neuronic disturbance. If this separate existence of the phenomenon consciousness be conceded, then psychology's especial task must be the description of this most complex form of energy. And psychology, like all other sciences, must proceed to the analysis and description of both causal aspects of its subject matter. The effects of nerve impulses upon consciousness must be discovered and analysed. None-the-less importantly must the influences of consciousness upon nervous impulses be studied. Through the mediumship of its influence upon nervous energy conscious will, of course, act upon bodily tissues, and through the mediumship of bodily tissues, consciousness will be found ultimately to influence the organism's physical environment. To leave out any of these essential causal mediums which are interposed between consciousness and physical environment must be to leave a gap in the totality of scientific description. Such gaps usually make for inaccuracy. Therefore, it would seem sensible for psychology to base itself first of all upon neurology, relying upon the description of nerve impulse behaviour furnished by workers in that field. Thus may psychology find more or less ready-made its points of departure and application.

If psychology's assignment be consciousness, and if consciousness lies in immediate contact with nervous energy, then the physiological changes which can be discovered in bodily organs and the observable physical motivations of the body itself may be utilized for psychology's purposes in two ways. In the first place, bodily motivations may be regarded as possibly symptomatic of a preceding psycho-neural cause. The proof of the existence of this primary, conscious-cause should not, as will later be set forth in detail, depend upon introspective observations. Definite, objective criteria, based upon known structures and functions of the particular mechanisms of consciousness, should be used always in deciding whether observed body changes or movements are the result of consciousness or not. In the second place, if such a change or

movement are not the result of consciousness, it might still prove of interest to psychology as a causal originator of consciousness. That is to say, measurable bodily changes and movements may represent the simpler energy unit causes of the generation of consciousness, or they may represent causes of its modification. Again we must emphasize the fact that bodily changes may or may not influence consciousness, and that the issue of whether consciousness has, in fact, been changed is to be decided as far as possible upon objective, rather than upon introspective data.

In summary then, measurable bodily changes and observable bodily movements may be of value to the psychological investigator in one or two ways. First, it is possible that the psychologist may use the bodily change as an indicator of pre-existing consciousness. In that case consciousness is treated as a vitalistic-type cause, the effect of which is the bodily movement. Or, secondly, measured modifications may prove of value to the investigating psychologist as indicators of the consciousness which is to follow. In this case the bodily changes represent a mechanistic type cause of which the alteration of consciousness is a predictable result.

Types of Causes Emphasized by Different Schools of Emotion Investigators

With such a preliminary view of psychology as that just outlined, we find ourselves in a position to consider the various aspects of psychology's task in which different types of workers specialize.

PSYCHO-PHYSIOLOGISTS

The psycho-physiologists may be regarded as investigators who are trying to make careful laboratory measures of intra-bodily changes. More especially do we find this type of researcher emphasizing the mechanistically causal aspect of his data. That is, the psycho-physiologist seems especially concerned with trying to describe the consciousness resulting from the physiological changes measured. Following this bias, perhaps, psycho-physiological workers have long striven in vain to prove that bodily changes constitute mechanistic-type causes of resulting sensations, and that these sensations are emotion (James-Lange theory).

On the other hand, a limited number of psycho-physiological researchers have tried to utilize physiological measures as symptoms, or indicators of previously existing emotional causes. Association reaction-time tests, systolic blood-pressure deception tests, and galvonometric emotion-detecting tests may be listed as investigations of this type. Bodily changes, thus regarded, are tacitly treated as results of emotion impulses acting as vitalistic-type

causes. Though physiological psychologists have been severely handicapped by the senseless assumption that all consciousness is, in its final essence, composed of sensation, they have, on the whole, shown no prejudical bias toward limiting the use of their results by regarding them either as exclusively mechanistic-type causes or as exclusively vitalistic-type causes. In short, the psycho-physiologists, for the most part, have made their bodily measurements, they have recorded their subjects' introspections carefully, and they have refrained from dogmatic assertion as to the type of causal connection, if any, existing between their two sets of data.

MENTAL-TESTER-STATISTICIANS

It is more difficult to place the mental-tester-statistician within the field of psychology as we have attempted to outline it. One is tempted to believe, at times, that this type of person is not working in the field of psychology at all. Yet even if this conclusion were justified, it would still remain true that the statistical testing type of result is throwing invaluable side lights upon many strictly psychological problems. It is difficult to find intrinsic psychological meaning in the statement that Thomas Brown has made an army alpha score of 200. There exists, so far as I know, no available key to the different elements of consciousness involved in securing 200 on that particular test, nor is there an extant compendium detailing the psycho-neural mechanisms of causation employed on the subject in obtaining this unusually high score. The prevailing mental test meaning of the score is merely that Thomas Brown has complied with and dominated an arbitrarily fixed set of tasks considerably more effectively than several million other persons have been able to do. If one would utilize this result in a truly psychological analysis of Brown, one must guess what psycho-neural mechanisms were called into play in this particular individual by the tasks imposed. Such an application of a test score to psychology is not as difficult as it sounds. After a little practical experience with tests, one comes to realize that certain characteristics of consciousness such as speed of reaction and finesse of compliance emotion are necessary to the making of a high test score. This is the sort of rough and ready analysis of test results into heterogeneously named " mental traits " at which mental test specialists become extremely expert. To a genius like Thorndike, for example, who has spent many years in analysing mental test results, the psychologically suggestive values of test tabulations are tremendous, if one may judge from his theoretical contributions to the psychology of learning. Accepting, then, this suggestive value of mental tests, rather than the statistical formulation of

their results, as the chief psychological value of this method of investigation, we may regard mental test procedures as specializing in the vitalistic-type of psychological causation. The bodily performance of the persons tested are treated a symptomatic of consciousness energy and nervous energy acting as vitalistic-type causes of the behaviour measured.

BEHAVIOURISTS

John B. Watson states[1] that in 1912 the behaviourists decided either to give up psychology or else to make it a natural science. Many people are now inclined to believe that Watsonian behaviourists have carried out not one but both of these threats. Certainly Watson's mechanistic bias, backed by his extraordinarily keen scientific observation, has accomplished wonders in converting psychology into an objective science. But, at the same time, there is considerable evidence that Watson himself has given up psychology altogether. In his latest work, he defines the subject matter of human psychology as " the behaviour or activities of the human being "[2] but he explicitly excludes consciousness from human behaviour and activity. If Watson should succeed in this bob-tailing of psychology, he would have talked himself out of a job. For neuronic activity has been assigned to the neurologist, body tissue activity to the physiologist, and classification of gross bodily behaviour of all animals, including man, to the general biologist. It might be possible, of course, for psychology to appropriate to itself the last named function of biology in so far as it relates to the genus homo. In such case psychology would act as a sort of clearing house for the facts of neurology and physiology, with a department for the release of composite motion pictures of whole human beings in action. But behaviourists as a matter of fact, have not behaved as though acting upon such a concept of their scientific task. Watson, for instance, has reported to the literature many carefully controlled experiments in which he sought to analyse and explain the intra-bodily mechanisms by which the final gross actions were brought about. Watson himself, of course, is now devoting himself to business, and his recent expressions of lack of interest in attempting to describe the more intricate bodily mechanisms of response (particularly those of the central nervous system) are probably attributed to his personal lack of time for laboratory experimentation, rather than to any radical shift in scientific attitude. On the whole, then, we may conclude that the Watsonian type of behaviourism

[1] J. B. Watson, *Behaviorism*, New York and London, 1925, p. 16.
[2] J. B. Watson, *Ibid*, p. 3.

is merely a mechanistically motivated attempt to turn psychology into objectively scientific channels by the simple expedient of eliminating whatever type of subject matter the behaviourists feel themselves incapable of describing. That the phenomenon eliminated chanced to be consciousness is unfortunate for " behaviourism ", not for psychology.

If, then, we dare to assume, in the teeth of the behaviouristic tempest, that consciousness is a very complex but stabilized form of energy which must be included in the " activities of the human being ", we may conclude that Watson and his allies would be especially interested in the control which physical environment and bodily tissues exercise over consciousness. Watson insists that only mechanistic-type causes exist. He regards the central nervous system as a mere off-shoot of the other bodily tissues which control it completely ; and he furthermore states that the responses of both bodily tissues and nervous system are wholly at the mercy of the physical environment, just as Atalanta found herself wholly at the mercy of the golden apples.[1]

Almost in the next paragraph, however, Watson attempts to show how the human race can throw off its thraldom to religious and social convention and other environmentally determined influences. He has recently maintained that no more children should be brought into the world until parents have learned enough about them to regulate each child's life according to the principles ot the child's own nature, physical, mental, and emotional. Surely no more striking faith in the potencies of vitalistic-type causation can be found than this statement ! If human consciousness were truly controlled by less complex energy forms of the environment, such dreams for human self-regulation would be sheer madness. The actively potent cause in the programme which Watson advocates is the complex human consciousness of parents, which, when it has been made still more complex by added knowledge, Watson hopes can control and modify the simpler consciousness of the child. It was not really the apples which over-powered Atalanta, but the more complex consciousness of Milanion who dropped the apples. It seems to me probable, therefore, in the light of this unintentional self revelation on Watson's part that we may, after all, expect the master " behaviourist " to lay fully as much emphasis upon analyses of vitalistic-type causes as upon purely mechanistic descriptions. These two aspects of any science are, of course, inseparable. And it is not reckless to predict that the behaviourists of to-day may be transformed completely into the psycho-physio-

[1] J. B. Watson, *Psychology from the Standpoint of a Behaviorist*, 1919, Philadelphia and London, p. 3.

logists of to-morrow if procedures for objective examination and description of consciousness can be perfected.

PSYCHO-ANALYSTS

Lastly, we may consider, briefly, the causal emphasis to be found in the doctrine of psycho-analysis. The psycho-analysts seem to take an especial interest in the control which various conflicting and distorted elements of consciousness exercise over human conduct. This clearly is a vitalistic-type of causation. Yet when we penetrate one step further into the psycho-analytical system, we discover that the offending conscious elements themselves are regarded as the product of still another type of entity, the libido. If, then, the libido turns out to be a mass of unconscious, physical, or psychological energy, the whole foundation of the psycho-analytical system must be regarded as thoroughly mechanistic. If, on the other hand, the libido is discovered to partake of the nature of consciousness itself, we might conclude that a vitalistic theme of causation runs back into the very heart of the psycho-analytical doctrine.

The effects which physical objects and environmental situations are supposed to have upon the emotional consciousness of children constitute instances of purely mechanistic-type causation. That is to say, the psycho-analysts teach that the emotional consciousness of young children is peculiarly susceptible to being controlled, perverted, and mis-directed by irresistible effects produced upon it by less complex forms of matter in the physical environment. As the individual grows older his consciousness is thought to be less susceptible to damage or perversion from such causes, although when the libido meets with environmental enemies, these outside antagonists may exercise more control over the subject's consciousness than does the libido itself. One the whole, we may characterize psycho-analysis as a system of thought which assumes a continuous state of bodily conflict between the vitalistic-type causes, having their origin in the libido or in consciousness itself, and the mechanistic-type causes springing from environmental stimuli. The psycho-analyst's avowed intention is to ally himself with the self-controlling conscious causes existing in a subject, for the purpose of defeating the mechanistic, environmental causes. These material influences are to be brought, if possible, into harmony with the human being's own nature. We may, perhaps, draw a general conclusion that the psycho-analyst believes psychology to be a study of the conflict between vitalistic-type causes and mechanistic-type causes, in so far as such causes relate to consciousness.

Summary

It may be well to summarize the causal emphases of investigators making the most important contributions to psychology of emotions as follows: Psychologists who seek to make simultaneous laboratory examination of consciousness as reported introspectively, and of physiological changes in the subject's body as measured by instruments of precision, are usually interested equally in mechanistic-type causes and vitalistic-type causes. These workers need not, and often do not commit themselves very definitely as to whether consciousness has caused bodily change, or bodily change has controlled consciousness. No fault can be found with this position, though a hope may be expressed that psycho-physiologists may manifest a little more boldness in the causal interpretation of their results, once consciousness has come to be definitely recognized as a form of physical energy.

Mental-tester-statisticians, working by a method which produces psychologically suggestive results of considerable value, may be said to seek causes of vitalistic-type in so far as test results are regarded as revelatory of existing consciousness of conscious tendencies.

Watsonian behaviourists, though ostensibly and aggressively mechanistic in their present propaganda, are found, nevertheless, to possess the most practical interest of all in vitalistic-type causation. For these behaviourists maintain that human beings, who are the most complex of physical energy units, possess the ability wholly to free their own behaviour from environmental control.

The psycho-analyst takes especial interest in the relations existing between mechanistic-type causation and vitalistic-type causation. The existing relationship between these antithetical types of causal influence is conceived by the psycho-analyst to be of conflict, and this conflict he would resolve in favour of the vitalistic-type causes. Of all classes of thinkers contributing to the problem of emotional theory, the psycho-analyst seems to be alone in his explicit recognition of the simultaneous existence of both types of causation, and of the scientific necessity for psychology to deal with both

Psychology of Emotion Tentatively Defined.

Applying our conclusions with regard to mechanism, vitalism, and psychology to the psychology of emotions, we may suggest a tentative definition of our prospective field of research. *Psychology of emotion is the scientific description of affective consciousness.* "Scientific description", as hereinbefore set forth, must include discovery and exposition of both mechanistic-type and vitalistic-type causes and their interactions within the field defined.

Concretely, we may expect to trace the origin of emotion to mechanistic-type causes; that is, to nerve impulses, thence to bodily changes and, ultimately, to environmental stimuli. These three types of cause constitute simpler forms of energy than does consciousness itself. We may also expect to find that many elements of emotional consciousness are terminated by these same mechanistic-type causes. Unfortunately, also, we may feel rather sure that the conditioning of emotional consciousness upon environmental stimuli will be found under the control, for the most part, of mechanistic-type influences. That is to say, we shall find that the quality of emotional consciousness which responds to and reacts upon a given environmental stimulus frequently has been determined by chance repetition of that stimulus, or by the conditions under which the stimulus first happened to be presented to the subject by his inanimate environment. If such be the case, the inanimate object, or simpler form of energy, is exercising complete control over the nature of the emotional response, and indirectly, over the subsequent type of influence exerted back again upon environment by the emotional consciousness evoked. This type of causation remains predominantly mechanistic throughout.

On the other hand, we must be prepared to regard bodily expressions of emotional consciousness as vitalistically caused by the consciousness energy itself. In other words, we must not forget that physical or physiological behaviour which we regard as symptomatic of emotional consciousness, is truly a result of the physical causation set up by the emotion energy. Emotional consciousness is to be regarded as a vitalistic-type cause whenever it expresses itself by modification of simpler forms of energy such as nerve impulses, bodily tissues, or unconscious objects of environment. We may expect, furthermore, to find emotional consciousness acting as a vitalistic-type cause over its less complex units. Larger and more complex units of emotional consciousness may causally control simpler units of consciousness by the round-about method of compelling nerve impulses, and, through their mediation, compelling environmental stimuli to manufacture new units of emotional consciousness made to order, as it were. Thus we find that the complete control of one's own emotional conditioning advocated by Watson may be brought about by vitalistic-type causation controlling and using to its own purposes mechanistic-type causes. This method, rather than the method of mutual conflict between two existing units of emotional consciousness each acting as a vitalistic-type cause, seems to constitute the natural means of emotional self-control. In short, emotional consciousness, acting as a vitalistic-type cause, may not only definitely influence nerve

impulses, bodily states, and environmental forces, but it may also influence these simpler energy units in such a way that their powers of mechanistic-type causation shall be utilized to prolong or terminate the existing vitalistic-type cause, emotional consciousness

This detailed analysis of scientific causation as it appears in the psychology of emotion is intended as a preliminary determination of the requirements which any sensible theory of emotions must meet if it is to serve as a skeleton for research. I may say, at this point, that I have not found the task of meeting these requirements an easy one. But when the requirements are eventually met I believe that the resulting psychological structures should prove acceptable to all the divers cults of research contributors to the psychology of emotions. The benefit of such a truce in the present psychological civil war would be great, for it is only by the establishing of a common working hypothesis that any substantial portion of these divers research contributions can be given meaning for all.

THE AUTONOMY OF THE "I" FROM THE STANDPOINT OF GROUP ANALYSIS[1]

By TRIGANT BURROW, M.D., PH.D.

With your permission I should like, in the moment, to approach the problems of our human conduct from a background that calls for the tentative adoption among us of a basis of observation that is, individually, neither yours nor mine according to our habitual acceptations. This may seem to you a strange proposal. But my hope is that, in proportion as it appears strange to you upon a casual view, it may prove the more interesting in its application as a direct method of experimentation. And so I am taking the liberty of inviting you to participate with me in a purely experimental adventure.[2] In the absence of certain preliminary experience such as provides the better facility for our undertaking, I must ask your utmost patience in my effort to initiate you into this quite fresh basis of endeavour.

As our procedure will deal with the reactions of human beings in their personal and social relationships as experienced also by ourselves, we shall be assisted if, preliminary to our inquiry, we shall recall certain biological considerations first brought to the attention of science through the investigations of Darwin. I have in mind the observations of Darwin respecting the interreactions of the individuals of a species in their group or societal function. You will recall that, contrary to popular assumption, Darwin did not base his principle of the survival of the fittest entirely upon the special equipment of the individual. He based it also upon this instinct of racial solidarity which, operating

[1] Paper read at the Seventeenth Annual Meeting of the American Psychoanalytic Association, Cincinnati, Ohio, May 31, 1927.

[2] I have been repeatedly asked by members of the American Psychoanalytic Association to afford them an opportunity to witness a session of group analysis. I had always to explain that a social analysis of its nature demands participation in its process. Naturally a social analysis admits of no outsider. There is no extra-social individual, no non-participant in a neurosis common to the social organism. This, however, was not unnaturally interpreted as an evasion on my part. So that not wishing to seem inhospitable, I offered this group-presentation which, as I stated before reading my paper, was a recourse intended to afford opportunity to the Association of converting the meeting directly into a group analysis.

within the species as a whole, tends to unite and preserve the individuals composing it as a concerted biological unit or group.[1]

As I have referred in other papers to this principle relating to the physiological interreactions mediating the group life of the species, there is no need to enlarge upon it here[2]. I have referred to it many times as a conceptual premise. The present reference to this instinctive substrate of man's interreactions as it operates within social communities is made because of the pragmatic background it affords for an undertaking that rests upon a group or societal standpoint of investigation.

Proceeding now to our direct inquiry, we shall find, I think, that a gathering of individuals such as we represent here, each constituting a separate social " I ", offers a convenient foil against which we may observe certain specific data respecting the " I " not possible of observation from the standpoint of the individual " I " itself. Such a social or group situation, in which it is permitted to discount the authority of this commonly unchallenged " I " —unchallenged, I mean, in its habitual private values—affords, in my experience, an entirely new background for computing our human evaluations and incidentally discredits many of our habitual personal and social inferences. " Knowing " is found to be not the knowing it is commonly conceded to be on the mere authority of the " I " that " knows ", and " feeling " not so dependable a feeling as has been assumed on the purely personal premise of the individual who " feels ". For quite automatically each individual is influenced more or less by a private criterion which, without his awareness, he preserves quite apart from other individuals[3].

In so far, then, as the individual " I " has come to embody a separate mood-tone with respect to every other " I ", we are confronted socially with a situation which only a stabilized and disinterested mood-approach is competent to observe and estimate accurately. As this basis of observation menaces customary

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[1] " Those communities ", wrote Darwin, " which included the greatest number of the most sympathetic members would flourish best, and rear the greatest number of offspring." (*The Descent of Man*, 2nd edition, p.163.) See also P. Kropotkin's *Mutual Aid*. A. A. Knopf.

[2] *The Social Basis of Consciousness*, Kegan Paul, Trench, Trubner and Co., London. Harcourt, Brace and Co., New York, 1927.
" An Ethnic Aspect of Consciousness ", *The Sociological Review*, Vol. XIX, No. 1, January, 1927.
" The Laboratory Method in Psychoanalysis ", *The American Journal of Psychiatry*, Vol. V, No. 3, January, 1926.

[3] This mood-bound habituation within the social organism is, I feel, the biology of the tendency reflected in the intellectual habit of " word-magic " so clearly described by C. K. Ogden. For these linguistic tendencies within the race disclose emotional implications which are shown in group analysis to possess deep social significance.

submission to established images, personal and social, it naturally does violence to prevailing prepossessions. But we shall, of course, discount this tendency as far as possible in the interest of the experiment upon which we are entering. It is the very premise of our experiment that a stabilized mood-basis shall replace the normal criterion of the individual " I " in the sphere of feeling and of knowing, and that this generally accepted criterion shall be empirically discarded in favour of uniform standards of measurement in the sphere of our subjective human reactions.

It is exceedingly important that we be prepared to accept a completely fresh basis of observation if we are to be adequately oriented toward our present experimental procedure. It is important to realize that the object that challenges our inquiry is nothing less than the entire background of our personal and social habituations. Naturally, to envisage one's entire medium offers difficulties. For it is inevitable that habituation should obscure the medium habituated. Obviously if a fish should become suddenly capable of conscious observation, the last thing it would observe would be the water in which it swims. Its own medium is too much a part of itself to become an object of its own contemplation. The very fact that the water presses close against the visual sense-organ and is in constant contact with the fish at every point on its surface would preclude the possibility of the water becoming an impression of which the fish could be made aware. It would be necessary first to remove the fish from its habitual environment in order that it should obtain an objective view of the watery medium in which it had previously been accustomed to move.

In the same way, I think it may be shown that there are contacts belonging to man's social medium which impinge upon him too closely and too constantly on every side to afford him impressions of which he is aware. He moves in and amid these contacts but they are too much a part of himself to become an object of his consciousness. He reacts to their influence without knowing to what he reacts or why. He responds constantly to the impressions of the social medium about him and constantly receives responses from it in return, but always that which is himself and that which is the medium about himself are merged into one another too imperceptibly to make it possible that the social medium of which man is a part should become an object apart from himself.

By " social medium " I mean the medium of mental interchange that everywhere exists among human beings and that makes possible their understanding of one another through the adoption of commonly accepted symbols or images. The social medium

of which I am speaking represents states of mind which exist solely by virtue of an agreement in terms that has come to be socially adopted among people; as, for example, the names of the objects surrounding them or of the sensations perceived within them. In addition to the state of mind corresponding to the symbol or image of any single object, there are states of mind which reflect a whole system of images or symbols, such as the highly complex agreement in terms or images embodied in our various social institutions. Government, for example, is a state of mind created socially by the adoption of certain covenants or systems of images on the part of the individuals subsisting under it in their collective capacity. The social medium, therefore, of which I am now speaking refers specifically to those consciously adopted and agreed symbols which mediate the quite purposive and sophisticated adaptations of man in social communities.

It is of vital importance that we keep carefully in mind the distinction between the biological group principle which unites the individuals of a species and constitutes man's instinctive societal bond and the highly complex system of intercommunication that constitutes the social medium of civilized man to-day; the one representing an instinctive or organic racial principle based upon physiological interreactions, the other representing a wholly sophisticated and peripheral manner of adaptation mediated upon a level of socially agreed images.

The result of careful studies of individuals in groups, observed on the basis of the agreed terms which unite the individuals composing such groups, has led to the discovery of an unconscious social factor with which we need very seriously to reckon. This factor, far from giving to the terms of common adaptation a common signification, tends to invest them with images or connotations which possesses for each individual a wholly private and arbitrary meaning. Accordingly, an object or sensation may mean one thing to one individual and quite another to some other individual. Or it may take on a meaning for the same individual at one time which is wholly contradicted at another. "Property" or "home", for example, assumes a quite different meaning according as it is my property or home, or some one else's. And even "*my home*" has one connotation when the members composing it are quite agreed respecting the wisdom of my general management of it and quite another when there is not so marked a consensus within the household as to the merits of my jurisdiction over it.

It is true that certain social images of common acceptation would seem to possess a quite permanent meaning, as, for example,

an axe, a boat, a house or a ball of yarn ; and it is not to be denied that the meanings or symbols for such objective entities are less liable to corruption than the more subjective designations or agreements that have come to exist socially among us. It is with reference to these subjective symbols that there is need for serious reckoning. For the observation of social groups has made it apparent that, in respect of man's subjective interpretations, there is lacking a unanimity of accord in the images or symbols possessing a supposedly common meaning. Not only this, but, like the manifest symptom or dream-image of the neurotic patient, this outer unanimity of agreement is found to serve merely as a diplomatic code or gesture beneath which each individual reserves the right to an interpretation that rests entirely upon his private feeling with respect to it. Closer investigation points to the circumstance that the person called " I " possesses unanimously a *feeling-* or *mood*-prerogative that is wholly arbitrary and private to him and that this private assumption has come to colour and distort his relationship to the social medium about him in such manner that he is no longer capable of viewing it as an object of disinterested observation apart from himself.

Let us consider more closely this " I " and its autonomies. Let us consider it in its subjective prerogative and compare the same reaction as observed in its objective evaluation. I wish indeed that in the interest of experiment it were possible suddenly to create subjectively, among those of us composing the present group, conditions of observation similar to those obtaining objectively when in a lecture illustrated with lantern slides one shows, for example, certain tissue conditions as they are demonstrable in anatomical or histological sections. The darkened room merges the audience into a common obscurity as far as their customary social perceptions of one another are concerned and automatically obliterates those features which mark the personal differentiae existing among them, while the speaker himself is wholly effaced or becomes at most but a moving shadow that passes momentarily across the screen.

In the absence of conditions as favourable to a clear, unobstructed subjective demonstration of man's biology as the conditions obtainable in a lecture illustrative of his objective biological features, let us, at least through what power of imagination we may summon, render ourselves as far as possible quite oblivious of our customary differentiae and so dispel momentarily the attitudes of mind habitual to our adopted social medium. By abrogating in this way the mental symbols or social images which habitually mediate our external agreement with one another, we shall find ourselves

automatically thrown back upon an internal basis that more nearly approximates man's primary racial coordination. In this way we are better enabled to obtain a common ground for evaluating those images or symbols which too often interpose obstacles to clear observation.

It is this group principle of coordination that represents the group basis of analysis, as it is the images of common interchange sponsored by the social medium that represent the material to be analyzed. We should understand, however, at the outset that the social medium is represented quite as completely in the single individual as in a group of individuals, precisely as the instinctive group principle of man is embodied as fully in the single individual as in the group. In the sphere of the social medium, images that are social are necessarily personal also, just as in the sphere of man's instinctive life his phylogenetic basis is ontogenetic as well. In my private analysis, I do not cease to adhere to a group principle of analysis because there is only one individual to be analyzed. Not any more than in the sphere of biology I should cease to adhere to laboratory principles of observation because I happened to be alone in a laboratory when studying my material.

In the laboratory of subjective processes or in group analysis, it is the reactions of the subject or of the " I " which become the material under examination. Turning, then, to the " I " (that is, to each of us and to his isolated autonomies), we find such reactions as the following, along with the undisputed authority they claim, to be quite general and of common social acceptance. " I don't like John ", " I just can't stand a crowd ", " I guess I know what I want ", " I possess the best parents in the world ", " I possess the truest religion and the only country worth while " ; or, " My children possess exceptional talent ", " My automobile is the best the market puts out " ; or, " John likes *me* and he is a nice fellow ", " That man is not favourably disposed toward me and I have no use for him ", " That autoist came near running over and killing me and he ought to get twenty years ", and so on ad infinitum. All quite usual affirmations based upon private images and connotations, every one of which may be flatly and quite as authoritatively contradicted by another individual or " I " who happens to be under the influence of an opposite system of images or prejudices.

If we will alter the habitual form of the statement and instead of the above subjective premise we will substitute a more objective statement of the same proposition, our formula would run : " The ' I ' says *it* does not like John ", or, " The ' I ' claims

that *its* country is the best of all countries ", or, " The ' I ' guesses that *it* knows what *it* wants ". In this mere shift of the mood-emphasis from subjective to objective, a totally different proposition results. In other words, standing, as one habitually does, inside of the " I ", one may easily maintain a view which one would not think of maintaining were one to place himself, for a moment, outside of the " I " and observe its processes quite objectively. When I do not like John, that settles the matter. It's the finish of John from *my* standpoint, or the standpoint of " I ". Some one else, however, overhearing my statement in regard to John and being subjectively quite disinterested in respect to both of us, might quite naturally question my judgment and the private prerogative upon which it rests[1]. The drivers of two taxicabs that have inadvertently collided will hurl epithets at one another which express in no unequivocal terms the subjective view maintained by each with respect to the other. Yet to the bystander who has witnessed the accident from the objective position of the detached observer, the subjective autonomy of both drivers is as patent as it is absurd.

You observe that the separate " I " when speaking in its subjective sovereignty (when I, for example, say that I do not like so and so) necessarily assumes that the presumable object of its dislike is somehow to be held accountable—that, if *I* do not like John, *John* must do something about it. But discarding all subjective prerogative in the matter and viewing the same formula with objective disinterestedness (what was " I " becoming " the I ") one could not accept this view. One would say that here are two terms not in agreement, but that it is impossible to say that one of them should be invariably held accountable and that the other should invariably hold it accountable. Such a view would be manifestly absurd. And yet what very different reactions we habitually obtain from individuals according as the

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[1] Pirandello has attempted to illustrate the situation in his clever dramatic sketch " Right You Are If You Think You Are ". But Pirandello's sketch is not so much a play as it is the projection in play form of the author's own unconscious participation in the same mechanism he feign would disclose. Pirandello's thesis would appear in a very different light were it submitted to examination from the standpoint of group analysis. The truth is it is really concealing under the symbol of actuality the very actuality it is supposedly disclosing. The playwright is practically asking us to observe with him how wrong other people are who are right, when all the while this is again but an attitude of equal rightness and autonomy on the part of the would-be observer! Only a group analysis offers the background for the observation of just such self-enveloping autonomies with their complete inaccessibility to the individual " I " and its " rightness ". In truth, what the playwrights are perpetrating these days with their naively " psychological " image-juggling is only matched by the equally naive achievements of their image-bejuggled audience!

images and connotations composing the social medium are subjectively or objectively apprehended by them !

Upon closer view, the first observation that strikes us is that the separate " I " that " does not like " some particular individual, and which never questions the rightness of its separative judgment in regard to that individual, is quite as often counterbalanced by the attitude of another separate " I " which contrariwise *does* like that same individual and which is quite as assured in turn of the rightness of *its* separate judgment toward him. It also appears to be a universal law of the social medium that a person who adopts an autonomous attitude opposite another person, automatically induces in that person an equally autonomous and opposite attitude toward himself.

A further interesting phenomenon coming under repeated observation of persons in groups plainly indicates the social character of the autonomy expressed by the individual. It indicates how inseparably the autonomous reaction of the individual is bound up with the autonomous reactions of the social medium about him. Under repeated experiment certain tendencies among the individuals of a group are found to be quite automatic. For example, it is found that their collective emotions form a spontaneous cluster, as it were, about the emotional mood of any one individual in accordance with the unconscious sympathy of the group in the autonomy expressed by him ; and, conversely, that they form an emotional cluster opposite him if his autonomous position happens to be irreconcilable with their own—a social mechanism identical with that just noted in regard to the single individual. The formation of these clusters is apparently wholly irresistible, and repeated observation renders their occurrence quite predictable[1]. It would seem that these cluster-formations possess all the fatality of chemical combinations. Indeed such reactions represent actual social reflexes and are as uncontrollable as the spasmodic reflex to be observed in the compulsive tic or anxiety reaction of an individual patient. As fear is the underlying motive to these reactions in the individual, so a collective, social fear appears to underlie these reactions within the group. What happens evidently is this : The individuals who automatically align themselves with another individual's autonomous position, are unconsciously constrained to do so because of the protection this temporary agreement seems to offer their own autonomies.

So that what is true of the individual with his separate " I " is equally true of a society composed, as it is, of a collection of

[1] " The Heroic Role—An Historical Retrospect ", *Psyche*, No. 25, July, 1926.

such separate " I's ", a circumstance that has been observed in social groups again and again in the cluster-reactions just cited. Accordingly, where one finds one person claiming, upon a purely private premise, that his religion is the best of all religions, one finds a whole community of persons proceeding upon this same private premise. Yet again this proposition is invariably offset by a counter proposition that is equally sponsored by the social medium. Or, where one finds half a nation of people quite convinced that theirs is the most representative and upstanding of all political parties, one also finds half a nation of people stoutly denying this proposition of the first faction and claiming the same prerogative for their own party and always on the basis of an authority that rests its security upon quite as autonomous a premise.

This social situation is a wholly subjective one, and, accordingly, only a quite objective observation of the social medium, whether represented in an individual or in a group, can adequately disclose the extent to which individuals are dominated by social images possessing no other authority than the private claim of the individual. Nor can we realize anywhere, perhaps, so adequately as in the actual social group the tenacity with which these spurious values cling to one. There may occur a social agreement among many members of such a group with respect to this or that opinon or judgment, but upon analysis it is found to rest (like the opinions of individuals regarding their common political party) upon an agreement that represents collectively the subjective autonomy of the " I ".

Our economic, religious and political views, then, would seem to rest not upon the covenants of an accepted ethic with respect to one another, but upon quite proprietary and possessive claims, which, being private and covetous, rest upon subjective prepossessions that are completely lacking in objective authority. It would appear that there is no economic system, that what we call our economic system is really a proprietary system.

If our social medium of images and covenants really rests upon opinions which lack the foundation of sound racial or economic principles and which are liable to the constant vacillations of subjective presuppositions, it might be worth while to inquire how far the age-old conflicts that constantly beset our national, political and economic life are traceable to such social images and covenants. It might be well to discover whether these cherished talismans merit the sincere assent of the individuals who are supposedly bound by them, or whether they are not really devoid of validity because of the private right of interpretation secretly

exercised by them, both in their personal and in their collective function.

This mechanism of autonomy, as I have elsewhere attempted to point out, has its inception in the very earliest impressions received by the child from the social medium surrounding him as sponsored by the mother. There is perhaps nothing so subversive of harmony and growth throughout the entire social scheme as the attitude of parents who, in their own autonomy, imbue their children with an unconscious attitude that is equally autonomous. It is such projections of parental autonomy that are really answerable for the agitations to-day that centre around the so-called problem of the child. It is not the child that is the problem but the parent, and it is precisely the parent's autonomy that causes him to find pleasanter entertainment in what he calls the problem of his child than in what he refuses to call the problem of himself and his autonomies. What is true of the arbiters of the home is equally true of the vicarious arbiters appointed by the home. Our schools represent an autonomy that exists upon an even larger scale than that of the home. In the attitude of the Church, the University and the world of business the situation is the same. And it is not possible to find a solution of the problems of human adjustment in our courts of law, because our courts of law rest upon subjective opinions or affects that are also based in each instance upon the inaccessible autonomy of the " I ", either individual or collective.

As psychoanalysts, however, our interest is preeminently in neurotic personalities and in those conflicts which impose barriers to their realization of a unified sex life. It is precisely in its influence upon the sex life that the autonomy of the " I" merits most uncompromising challenge. As seen against the background of a group principle of analysis, I have been convinced that the subjective prerogative of the separate " I " is the all-important obstacle to the healthy adaptation of man and woman in their mutual sex function. Social images that are mutually accepted by two individuals in their external adaptations but with which they are not in accord in their internal evaluations, cause an obstruction to their natural sex function and necessarily lead to unassimilable image-constructions and to the inverted elaborations of autoerotism. These image-formations can only preoccupy each to the exclusion of the other, except as their private images become mutually self-gratifying upon a purely peripheral, narcissistic plane. But a union based upon a sexual accord that is nothing else than the reflex social cluster of two individuals in response to mere autonomous social images is not a biological sex union.

Freud has shown—and we have all been a witness to the accuracy of Freud's thesis—that the neurosis represents the thwarted expression of the life of the individual, and that concomitant to this obstruction in the individual's life he is preoccupied with endless phantasy constructs represented in symbols which are invariably traceable to distortions in his instinctive sex life. But what is the constant and universal cause of this repression? To what does the system of images comprising the phantasy world of the neurotic owe its existence? We know, of course, that the neurotic is not in contact with the actualities of his environment. We know this from our repeated analysis of his repressed unconscious trends. But why is he not in contact with the actuality of things? Why is he repressed? To say that the individual's early environment and the over-zealous interest of the mother were the chief factors contributing to the subsequent development of his neurosis is very true, *but an environment that represses is itself also repressed.* The individual who becomes neurotic in response to his social environment is reacting to an environment that is equally neurotic.

Through the technique of group analysis, I have had the opportunity to witness in their immediate social contact just such social groups as normally compose the environment of childhood. I have had the opportunity to observe in their social setting just such phantasy constructs and symbolic distortions as occur in the individual neurotic. As it has been found that these social phantasies of immediate daily analysis possess the same content as the wish-fulfillments disclosed upon the analysis of the individual's dream, and as these social images have been traced in every instance to the circumscribed phantasy-system that is each individual's subjective autonomy, my conclusion is that the instigation to these two identical processes—the social image and the individual dream—is due to an identical cause, namely, to the autonomy of the " I " and to its indisputable right to interpret the universe in terms of its private delectation.

It is not true that the neurotic dreams only in the dissociated images of the sleeping state. The neurotic is dreaming throughout all of his day. It is not true that his dream is built of the impalpable fabric of phantasies only. In the casting of his images, he employs no less the solid materials of daily actuality also. Nor is it true that the medium out of which the neurotic weaves his images of unreality, sleeping and waking, is any other than the medium that forms the tissue of man's images generally. Accordingly, the analysis of the motives that operate in support of the separate " I " and its autonomy, is an analysis of the causes

that lead to the construction both of the dream imagery of the individual and of the waking imagery of the collection of individuals composing the social milieu.

This process, however, cannot rest upon theory nor can it rest upon the authority of my statement. Again we need to return to conditions which provide a basis of objective scientific experimentation. Only conditions of disinterested observation can serve us if we are really to observe these sporadic manifestations represented in the private affect as sponsored by the individual's subjective autonomy.

A biological group, observing the reactions of an individual to the social group-medium about him, will discover that the unfailing symptom of the personal autonomy is the reaction of protest and of disavowal that is invariably elicited at the least suggestion of examination into it. This often demonstrates itself in the prompt recourse of the individual to obscure the reaction calling for immediate observation. This he will do through an effort to cover his autonomous reaction with intellectual substitutions. Or, failing this recourse, he will, through the very autonomy of his efforts, fall straightway into the autonomous affect he is seeking to circumvent. In this situation, if there is a sufficiently strong emotional cluster to rally to his support, as we have frequently seen occurs, the individual's autonomy straightway acquires the social authority necessary to avert an objective inquiry into his processes. Thus through this autonomous social reflex the individual succeeds in withdrawing again into the shell of his private autonomy. In brief, in one's biological group integrity, it is possible to observe that the individual in his single or collective persona is quite incompetent to take part in a scientific evaluation of his own subjective processes. We find that, like the fish in respect to its impinging medium, the very closeness of the social medium precludes the individual's objective observation of it.

As I have said, an objective examination of the social medium of which we have all become subjectively so close a part, tends at first to offend accustomed prepossessions and, naturally, I have no wish to impose this experimental procedure upon others. But, having found it of incalculable assistance to myself in my scientific outlooks and having found it of great practical service to my patients, I have taken the liberty of offering it here for whatever value it may seem to you to possess.

To sum up: Freud has, through the principle and method of psychoanalysis, provided us with an instrument and a technique for probing amid the tissues of man's mental life and exposing to view mechanisms and reactions hitherto unsuspected by students

of medicine and biology. Where there had previously existed only an anatomy of the mind, there now exists an histology of the mind. Where formerly the study of the emotions was restricted to macroscopic structures only, there has now been opened to us the study of emotional processes in their minutest microscopic details. Such has been the contribution of the method of psychoanalysis as discovered by Freud.

We must come to see, however, that an analysis of a particular symptom or individual has as its scientific aim the discovery of the universal cause that will synthetize our understanding of *all* symptoms and of *all* individuals. It appears to have been forgotten that the ultimate object of analysis is not analysis but synthesis, that analysis is only a means of which the end is a synthesis of our analytic findings. In the bacteriological technique invented and applied by Pasteur and Koch in their effort to discover disease germs, many discoveries were made regarding the minute cell structures which came under their examination during the process of their inquiries. But they were not on this account led to lose sight of the primary purpose of their inquiries. It was Koch's effort to discover and to establish beyond question the specific and universal cause that would synthetize our understanding of tuberculosis and enable us to deal intelligently with its manifold symptoms and processes. Perhaps the most interesting of the disclosures incident to the discovery of the bacillus of Koch is the fact that this germ resides practically universally in the tissues of healthy individuals, as well as in those who are manifestly victims of the disease.

A group analysis has afforded evidence that there is a microgenic incident responsible for the neuroses and that this incident resides in the mental constitution not only of the neurotic individual but of all individuals. It has afforded evidence that the manifold proliferations of this microgenic incident may be traced to a universal phyletic source which can be uncovered only through a synthesis of our understanding of the social medium with its basis in the autonomy of the " I ". It is inevitable that the private individual in his private prerogative should tend to adhere to an individualistic method of analysis that leaves unchallenged the private autonomy of the analyst. But an unchallenged autonomy, as viewed objectively, is of the essence of dogma and Fundamentalism. The advance of the biological sciences began with the abrogation of dogmatic fundamentalism and with the adoption in its stead of evolutionary principles that opened scientific investigations to the consensual method of the laboratory. An advance in the biology of the mental sciences must likewise

be paralleled by an equal adoption of laboratory methods of observation and by an inquiry into our human processes that uncovers completely the pathological incident residing in the subjective autonomy of the " I ".

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It was stated in a foot-note at the beginning of this paper that this presentation was intended as an opportunity of initiation of my psychoanalytic confreres into the principle and procedure of group analysis. The experiment was sociologically significant. The members had made a request, in all sincerity, for this opportunity to participate in a group analysis. There could be no question of the entire good faith in which my colleagues had sought a closer understanding of the group method. But it was inevitable that their interest should rest upon a purely theoretical basis, that when there came the critical issue and when from " theory " there was launched a direct mood-challenge of habitual mood-situations as they exist socially, this opportunity was found most unwelcome and was met with solid group resistance. The only response elicited was characteristic of group reactions elsewhere. From the standpoint of group analysis the meagre response voiced by the meeting rested precisely upon the autonomous basis of the " I " and obviously without the least suspicion on the part of the Association of the autonomous mood-basis represented by its response. A social mood-cluster stood unconsciously as a solid phalanx against the least hint or suspicion that might reflect upon its habitual group-mood. This is scientifically interesting, and I feel that it is vitally important from the point of view of our mass-needs organically as well as sociologically.

This impasse to the acceptance of an objective approach to man's social mood has demonstrated itself again and again during the past seven years in similar group situations. This is not a circumstance peculiar to one particular group. It is characteristic of all observable groups. The conclusion is unescapable that there resides within the unconscious social processes of man a mood-habituation that is utterly inaccessible to us on the basis of our present social mood. It is evident that there exists a state of mind which by common social consent automatically resists all attempt at a social self-inquiry. If this is true, it becomes further evident that there is required some fundamental reconstruction within the mental constitution of society throughout. For this wide-spread social resistance points inevitably to the presence of an attitude of *transference* or unconscious dependence that exists socially among us as definitely as there exists this unconscious

dependence in the attitude of the child toward the parent or of the patient toward the analyst.

The mood-impasse occurring at the meeting at which this group experiment was attempted has served still further to crystallize the feeling long dormant with myself and my associates (as in our own group work we have experienced this same social rigidity within ourselves) that a technique must be opened to society generally such as will allow it to take responsible care as a social unit of its own unconscious social processes.

How far the insidious influence of an arbitrary autonomy masquerades under the credentials of stabilized authority has not begun to be suspected by us in any analytic sense. It has not begun to be suspected how far this purely private and uncontrolled mood-presumption dominates our entire social life. The sexual repression which Freud has so rightly emphasized in individual neurotics is, I am convinced, quite secondary to this more general mood-interdiction within the *social* instinct of man. The pathological effect of this arbitrary social mood in repressing man's natural societal instinct is traceable throughout our social institutions everywhere. It is the position of group-analysis that the concurrence between this wide-spread social repression and the general increase socially of insanity points to a definite causal relationship. For a society thus dominated is unthinkingly dominated. It is a society that is a prey to unconscious repression as definitely as the individual neurotic is a prey to unconscious repression.

Discussion, argument, and speculation will not avail. This is mere rationalization and evasion. The right understanding of this wide-spread social condition calls for the application of scientific method. This means the method of the laboratory. It means the scientific recourse to a technique that makes possible the observation of the physiological processes which mediate the behaviour of human beings in their social interreactions. Such a procedure calls for the development of controlled methods and criteria whereby we may discriminate with objective precision between the pseudo-physiological reactions that are artificially dictated by an autonomous social mood and those physiological interreactions that are the natural expression of societal man.[1]

We have need to face the circumstance that there must somehow be awakened a *unitary social responsibility* toward what is now the *collective social mood* of man with its unconscious transference between individual and individual. To attempt to face the problem

[1] "Biological Foundations and Mental Methods", paper read at the seventeenth annual meeting of the American Psychopathological Association, Cincinnati, Ohio, June 3, 1927.

of the individual neurosis or transference, in the absence of serious reckoning with man's mass neurosis or transference, is to miss the real problem of our human pathology[1]. A broader basis than that maintained by our present psychiatric criteria is urgently demanded. In New York State alone, for example, according to a report quoting the State Commissioner of Mental Hygiene, the increase in the number of insane patients for the year ending June 30, 1927 was more than double the average yearly increase for the previous ten years. According to the same report, there are in the hospitals of New York State 47,514 insane patients, and so rapidly is insanity on the increase that these hospitals are to-day forced to house 10,000 inmates in excess of the capacity of these institutions. It is amazing that science could for so long have looked on idly at this appalling disparity between the methods obtaining in the field of mental illness as compared with the progress of its methods in the structural field of medicine. Only some very obstinate obstruction to man's capacity of self-observation as a social unit could all this while have allowed him to accept with complete impotence the steady increase, in our social communities, of mental illness as compared with the overwhelming decrease of disease in the structural sphere.

We are an immediate witness to the clearly demonstrable mood-obstructionism existing socially within groups coming under analytic observation, and this even among scientific groups, such as our own, whose function is precisely the study and analysis of pathological mental states. Such a situation, together with the situation existing socially with respect to insanity at large or to mood-reactions occurring within the community, is, I feel, an ominous tell-tale of the serious need in which we stand for reconstructing our psychiatric and psychoanalytic foundations.

There have been seven years of intensive study and analysis on the part of my laboratory associates and myself of social processes as they habitually exist within so-called normal groups. If this study is in the least deserving of scientific consideration, the situation before us calls for the recognition of our mass responsibility and for an unflinching stock-taking of processes existing socially among ourselves as elements in a mass neurosis.

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[1] " The Problem of the Transference ", *British Journal of Medical Psychology*, Vol. VII, July, 1927.

LIFE ENERGY

By MATTHEW B. RAY, D.S.O., M.D.

Whatever opinions may be held regarding the relationship between the phenomenon we call "mind" and that "string of events" we call the brain or nervous system; it cannot be gainsaid that the quality of the mental process has an intimate correlation with the pattern or framework of the brain and its associated structures.

We find infinite variations in structure of the nervous mechanism, beginning with a single celled animalcula such as an amoeba, and tracing the increasing complexities of its arrangement until we arrive at man himself. Speaking generally we might say that there is a certain nervous mechanism which is common to all creatures even the most elementary. This is the part concerned with the vital functions or those essential to life. It has received the name of "autonomic" nervous system in contradistinction to a part that is only present in the higher mammalia which is concerned with the "intellectual" functions. An examination of the brain of an example of the latter will reveal the presence of a distinct bulging of the fore parts of that organ. These bulging parts are termed the frontal lobes, right and left. The frontal lobes are directly concerned with "consciousness" or to use a better word, "awareness". One can form a rough idea of the probable state of the mentality of any creature by an examination of the state of development of its frontal lobes. In man they appear to take up the whole of the brain space and that part concerned with the vital functions is hidden beneath them. In the shark the lobes are almost entirely absent or very rudimentary. In both man and shark the "autonomic" system occupies very much the same position with relation to the spinal cord but the difference lies in the possession by the former of these highly developed lobes.

In the growth of the human embryo, before birth, the "autonomic" system is the first to appear. At a later stage the frontal lobes begin to show themselves. The increase in size of an infant's head after birth is entirely due to the growth of these parts. If for any reason the head cannot expand, a condition of idiocy supervenes. The child remains to all intents and purposes a

little animal, incapable of intelligent action. All we can say about mentality or intellectuality in regard to creatures with rudimentary frontal lobes is that it consists of continual efforts at " self realisation " of " ends " that are direct and immediate. The " space time " element does not enter into the cognition of an animal. Although a dog may recognise his master after years of separation, the recognition is instinctive and takes place at a lower level than the reasoned process in man. Animals have a memory of a kind but it is subserved by the " autonomic " system. We see sparrows building their nests. Can we for one moment think of them as comparing last year's nest with the one they are engaged upon? There is no fashion in sparrow nests, in the sense of changing year by year. The sparrows of to-day build exactly the same kind of nest that they were in the habit of constructing a thousand years ago.

A sparrow or any other bird or animal without the cranial development of man works towards certain " ends " and in attaining these " ends " realises itself as a sparrow or other creature as the case may be. These " ends " are somehow " in the plan " of construction of whatever living thing we may be considering.

If we turn to our own automatic or instinctive actions we see the same idea underlying them. These actions are after constant repetition, related to a part of the nervous system that has its exact counterpart in the animal. Constant repetition of certain muscular movements, walking, riding a bicycle, playing golf and the like, induce in time an almost unconscious performance of movements which at first demanded the utmost concentration. As Samuel Butler said., one never does a thing well until one forgets all about it. The golf player who thinks too much about his stroke " presses ". The highest or intellectual centres seem in time to be able to dissociate themselves from those concerned with actions, which by constant repetition become automatic.

Theoretically, we might destroy in, say a dog, that part of the brain that governs its proficiency in herding sheep. As a sheep dog it would be useless but some characteristics of a dog as a dog would remain. We could go further and destroy a little more of the brain and all " doggy " manifestations would in turn disappear, leaving behind only a living breathing animal. An example of what we are trying to illustrate is seen in the case of a human being who has sustained a severe injury to the brain seriously involving the frontal lobes. All mental power is lost and the patient is said to be " unconscious ". He is nevertheless still a living being who will move his limbs when stimuli are applied; the functions of breathing and the heart's action continue and in many instances

if liquid be placed in the mouth it will be swallowed. Mentally the individual in this condition is at the " level " of his autonomic system and so long as he remains in this state there is very little to choose between him and an animal.

The nerve cells throughout the body, whether belonging to animal or man, are to be regarded as " energy units " and in this connection I cannot do better than quote some passages from Crile's work on " The bipolar theory of life ".

He says,

> Life is a dynamic not a static phenomena. Living things can therefore only be interpreted in terms of that kind of energy whereby they are produced. An animal is therefore an " energy phenomenon " rather than a " form phenomenon ".
>
> Those processes that distinguish the living from the non living are due to electrical forces within the protoplasm which endow it with the essential processes of irritation, assimilation and reproduction. By means of these processes, groups of the protoplasmic energy units become associated in cells. Within the cells, identical electric forces produce the mitotic processes by means of which are formed the paired identical parts each of which forms a new cell. Even before the protoplasm is formed, electric forces arrange the atoms and molecules as " building stones " each in its own place to form the essential structures of the protoplasm.
>
> The electric potential within the cells is created by variations in oxidation on the two sides of the films that separate the nucleus of the cell from the substance of the cell.
>
> Thus in each of the trillions of cells of the body there is created an electric strain, the vibratory discharges of which serve as the catalyst which produces oxidation.
>
> With the diminution in the difference in " potential ", with the lessening of the frequency and force of the vibratory discharges, there develops successively diminished vitality, fatigue, exhaustion, unconsciousness until " equilibrium "—death—ends the scene.
>
> The living organism is an " electrolytic series of cells in suspension ".

From an ordinary common sense point of view, we and our fellows are naturally regarded as self contained beings in possession of certain attributes and fully aware of a world outside ourselves. We speak constantly of our surroundings and environmental conditions as playing the major part of our everyday life. Is this a true picture of reality? To begin with, is there any such thing as " environment " in the ordinary acceptation of the word? If

we and the rest of the universe ultimately consist of nothing more than electric charges in magnetic fields, where is the boundary line between the fields? How can one part of the universe be ultimately separated from the rest?

As a smaller subdivision of living matter than a cell cannot be imagined we must regard it as a unit of life. Now when an aggregation of cells or units takes the form of a living creature, we have to look for some special affinity which binds these cells together to serve the requirements of the whole. Each individual cell has its " field of action " just as its component atoms and molecules have theirs. Professor Whitehead in his book on " Science and the modern world " says

> The animal body constitutes a total organism which includes a mental state, which enters into its plan.
>
> The plans of the total organism modify the plans of successive subordinate organisms until the ultimate smallest organisms such as electrons are reached.
>
> An electron within a living body is different to an electron outside it by reason of the plan of the body.
>
> The electron " blindly runs " either inside or outside the body but it runs within the body in accordance with its character within the body, i.e., in accordance with the general plan of the body and this plan includes a mental state.

We see then that the special affinity which binds the cells together is the " plan " of the organism. In its turn this plan or framework is subservient to the general plan or framework of the universe.

As we are no longer justified in postulating anything of the nature of hard, unyielding, enduring " substance " in the universe, we have to regard the atom and its aggregations as " events " in space time. This theory at once destroys the conception of an " EGO " as an ultimate possibility. In this sense the " unity of a personality " has become as Bertrand Russell says " a peculiar causal nexus among a series of events ".

In his work entitled " An outline of philosophy " the same writer points out that such a commonsense phrase as " I sit at my table " would in philosophical language be rendered as follows.

> One of a certain string of events causally connected in the sort of way that makes the whole series that is called a person has a certain spatial relation to one of another string of events causally connected with each other in a different way and having a spatial configuration of the sort described by the word table. (Outlines of philosophy p. 255.)

It was said above that an animal was an " energy " phenomenon rather than a " form " phenomenon. The term " energy " at

one time was defined as the " capacity " for work and we heard a good deal about potential and kinetic energy. To some extent these older concepts still remain good but more recent opinions hold that " energy " and " matter " are the same. For instance sunlight is energy. A beam of light has weight and can be weighed. It is just as much a " substance " as a solid rock. If we could imagine a rock being subjected to sufficient heat it would give off its substance in the form of waves, some visible and others invisible. The " transformation " of energy always gives rise to heat and light. Some metals such as radium are constantly giving off their " substance " others again require the temperature to be raised.

The source of all energy so far as the known universe is concerned is obviously the sun. As matter and energy are now looked upon as identical terms, all matter or substance originally came from the sun. Without the sun, the world would quickly die. If we can postulate a life energy, such energy must necessarily be derived from the sun. Although the entire solar system is thus considered to be " an energy phenomenon " there are variations in the kind of energy manifested. Thus there is the kind of energy associated with those patterns or " frameworks " which are said to be alive, which differ entirely from that associated with " patterns " or " frameworks " which are said to be " not alive ". The distinction between the " living " and " not living " lies in the presence or absence of certain properties or qualities.

Broadly speaking the properties or qualities which characterize " living things " are five in number,

1. Movement. This is controlled from within. It is purposive and directed towards certain " ends ". A worm moves by muscular contraction but a dead leaf is blown along by the wind.
2. Growth. Also from within. Food is taken into the body and is there converted into substances which " nourish " the organism and induce growth. Inanimate objects usually increase in size from without, e.g. a crystal or sedimentary rock.
3. Respiration. All living creatures respire in that a constant exchange of oxygen and carbonic acid is going on.
4. Reproduction. All life reproduces itself either by a process of simple division or by means of specially elaborated groups of cells which subserve the sexual function.
5. Irritation. The whole of the mental functions of any given creature are included in this term " irritability." It means the response to stimuli wherever they arise from.

The whole of these properties may reside in a single speck of protoplasm as examplified by the amoeba. An amoeba has no

limbs, yet it is capable of movement of a sort. It has neither stomach, lungs, reproductive organs or nervous system, but it manifests all the properties of life mentioned above. It takes in food and digests it. It respires, it reproduces itself and responds to certain external stimuli. When we come to the consideration of higher and more complicated living creatures which instead of being composed of a single speck of jelly, are made up of trillions and trillions of cells, we find that all these functions become specialized into different groups of cells which take on a " pattern " most suited to their needs. For " movement " we have cells specially differentiated as " muscle cells ". For " growth " we have all the cells concerned with digestion which are of very peculiar structure and could not possibly be of use for anything else. For " respiration " we have again very highly differentiated cells that form the lungs and air passages. The same applies to the " reproductive " system. The reproductive cells are probably the most highly differentiated in the whole body as they contain within them the " germs "of the " patterns " or " frameworks " of the race that is to come. We have already referred at some length to the nervous system and its various parts and subdivisions.

The entire living body is an " energy transformer " and the brain and spinal cord are transformers of that particular kind of energy we group under the term " mental ". The " character " of the transformation depends on the make-up or construction of the brain, in other words, the " pattern ". The brain receives impressions of all sorts from without. Light impressions or stimuli are taken up by the eye, sound waves by the ears, sensations of smell by the nose and so on. These impressions or stimuli are all manifestations of energy. The brain receives and transforms them into action, movement or thought. A thought is just as much a transformation of energy as any other response to a stimulus. Take an example of a bull in a field who is suddenly confronted by a red rag. The energy which we call light is transformed in the bull's brain to that of movement and rage. Human thought is, we hope, not so elementary as this, but the same principle underlies it.

A useful example in this connection is that of wireless telegraphy or telephony. The waves that are originated by a powerful installation extend for vast distances through space. They are " constant " in the sense that they are the same for all kinds of receiving sets scattered throughout the country. But by no means all the receiving sets are capable of " picking up " the waves. This depends entirely on the character or construction

of the instrument. A cheap roughly made instrument cannot be anything like as efficient as one which is more expensive and elaborate. The action of a receiver in transforming waves into sounds is a " manifestation " of its function and strikingly comparable to the reception by the brain of impressions and their transformation into thought or action.

An elementary nervous system such as one sees in the lower animals is only " tuned " for the reception of relatively simple impressions. Such creatures do not " know " in the sense that we do. There actions are in no way controlled by the higher intellectual faculties. Such faculties are only to be found in association with a relatively complex brain and nervous system.

If as we have already seen, an " I " or " Ego " cannot be ultimately postulated as " the unity of a personality " but only as a " causal nexus among a series of events ", we must conclude that there are " strings of events " which make up certain patterns of nerve cells that are able to transfer stimuli received by them into that form of energy we call thought. Other strings of events in the shape of nerve cells of a relatively more simple pattern are unable to transform energy in this manner.

A tree, an insect, an animal or man are all composed of trillions of cells each of which functions in time and space according to its " pattern ". All these cells that make up any given, so called " individual " are subservient to the pattern of the individual considered as a " whole series" in time and space. May we not regard each living thing as not only functioning according to its pattern, but also subservient to a much greater " pattern " viz.— that of the whole universe considered as a whole series in time and space.

As a corollary to this, is it not possible to assume that what we call " thought " is a transformation and manifestation on the part of certain " higher " brain cells of an energy which really belongs to the universe, considered as a whole series. If this be granted we can no longer truthfully say " I think " but " there is thinking ". That series of events which makes up my brain is a functional manifestation of the thought of the universe. We should perhaps say a local manifestation. This inadequately presented theory has an important bearing on our conception of a future life.

Life being, according to the views already expressed, a manifestation in time and space of electricity or energy, these centres of electrical disturbance are continually changing as their " framework " or cells are being renewed.

The " life " of any living creature is a continual replacement

of worn parts which is represented by this cellular renewal. Let us apply this observation to the organisms that the cells make up. In the ultimate scheme of the universe these organisms bear the same relation to it as do their constituent cells to them.

The whole of the living creatures on the globe can be looked upon as a " functional framework " just as the cells of each living creature form a functional framework for such individual.

The death of either a cell or a whole organism simply means that a " cog " in the machine or a " peg " in the framework has been removed and renewed. The machine goes on and the framework continues and the only way they can endure is by a constant renewal of their parts.

The all embracing electrical field remains and a continual series of fresh centres of activity keeps coming into play. Life, considered as a highly specialized manifestation of energy will continue so long as fresh centres of energy are capable of being activated. The question naturally arises as to whether there is any limit to be placed on the manifestation of life in this world. A period can be envisaged when life was incompatible with the globe in a molten or gaseous state. A time in the future can equally well be foreseen when this world will be no longer able to support life. Astronomy teaches us that such derelict worlds are in existence and there is no reason to suppose our globe is particularly favoured. Once the principle that life is a manifestation of energy in space is granted, it is just as easy to imagine its applicability to atoms as to the entire solar system.

Instead therefore of regarding death as the flight of a soul and its persistence in a disembodied state in cloudy nebulous regions with the maintenance of its incorporeal individuality; we should rather look upon it from the opposite standpoint and see in it the cessation of electrical excitability on the part of a purely temporary collection of centres of energy in time and space.

Our hopes of a future life are centred in this world as seen by us. The life or energy considered as a whole, which activates these purely temporary frameworks or patterns, cannot die.

GENERAL CONCLUSIONS.

We would postulate the existence of a life energy derived entirely from the sun. This energy being of the nature of an " electric disturbance " it should be defined as an all pervading property which is determinative for all living organisms. This conception is quite distinct from that of a separate " spirit " or " entelechy " as being present in and activating all living creatures.

Life energy being universal and all pervading is not to be confused with a life regarded as the exclusive possession of each individual.

The life energy is only operative with regard to protoplasm, which it organises. The impulses arising from this energy connect themselves with substances in protoplasm which release " processes." How they do it is unknown.

Life energy is subjective in that it puts autonomous subjects into the world. There develop everywhere that life extends, a " framework " which may consist of cells or individuals which subserve its functions. The constant renewal of these elements or units which constitute the framework is due to the life energy.

Whatever arrives at our consciousness by way of our sense-organs is a manifestation of energy which may appear to us as either living or lifeless. The exercise of such powers of observation like every other mental act is in itself a " manifestation of energy ". May not the phenomenon of consciousness be comparable to the internal construction of the atom in that the object as presented might be represented by the proton or nucleus and our thoughts by the spinning electrons.

Energy and matter being interchangeable terms, a thought is ultimately just as substantial as its object.

BEHAVIORISM AND *GESTALT*-PSYCHOLOGY

By OLIVER L. REISER

University of Pittsburgh

There is a tendency on the part of some psychologists to emphasize the differences between their own viewpoint and that of other psychologists. But these differences are sometimes exaggerated.

Thus there has developed the mistaken belief that behaviorism and gestalt psychology are totally incompatible types of explanation. But if the behaviorists are willing to make one concession to the gestaltists and the gestaltists will concede one point to the behaviorists I think it can be shown that the two psychological movements flow together into one stream. The two outstanding differences which need to be resolved are these :

1. One apparently unbridgeable gap between these two schools of psychology is met when we come to the explanation of the way in which responses are built up. By assimilating the idea of chance combinations of neural and muscular elements into the notion of the conditioned reflex the behaviorist seeks to build up complex patterns of reactions, without employing the notion of *gestalten*, which seems to the behaviorist to appear to be a diluted survivial of vitalism. In recent lectures Dr. John B. Watson has argued as follows : If you grant the behaviorist one hundred elementary responses (" reflexes ") and allow him to combine them according to the laws of probability, which determine the resulting possible permutations, the behaviorist can, with factorial 100 as a start, build up all the complicated patterns of response which can be exhibited by human beings. Watson here supposes that all combinations (patterns) of behavior are equally probable, but if he is willing to admit that some patterns or permutations are more likely than others (a fact well recognized in certain types of physical and chemical processes), then one difference between the two points of view will disappear.

In gestalt theory all patterns (combinations of atomic units) are not equally probable, in the sense that the elements thereof are independent. There is the *melody* of response, in which the elements lose their individuality in a non-summative whole. Per-

ceptual (phenomenal) as well as response patterns must satisfy the laws of simplicity and compactness of structure growing out of the physical principle that structures tend to decrease their configurative energy to a minimum. This follows in accordance with the reinterpretation of the second law of thermodynamics to mean that a system progressing towards an end state tends to reduce its potential energy to a minimum. The present writer[1] has attempted to extend Kohler's speculations by developing the idea that there are two kinds of *simplicity* in nature.

Both behaviorism and gestalt theory set as their ideal the reduction of organic responses to terms of physical processes, and if the behaviorists are willing to extend the meaning of the term *pattern* to that of the gestaltists the two points of view will have much in common. There is nothing in the notion of " pattern " or *gestalt* to imply that it is an Aristotelian *form*, even though von Ehrenfels' criteria for gestaltsqualitäten be adopted. However, another difficulty in the way of a synthesis is presented to the present writer by Dr. S. Renshaw: A typical gestalt is claimed to be found in what Lloyd Morgan calls " chordiness ". But the psychological basis of the chords of a melody is *fusion*. And the experiments of Dr. Farnsworth and others seem to show that musical fusion (in such a chord as *c*, *e* and *g*, for example) is a result of habit, and repetition of other triads which now sound like discord will eventually cause them to sound pleasant (concord resulting from fusion). There is therefore nothing objective in such gestalten as harmony and melody. This, of course, raises the whole problem of how much is instinctive and how much is acquired—like our habits. The following comments are all the suggestions I have to make.

So far as the problem of instincts is concerned, it is to be noted that both Watson and Koffka appeal to Charles M. Child's notion of physiological gradients to explain the appearance of structures and functions, and perhaps further investigations along the lines of the effects of common environmental influences operating in embryonic or prenatal development may serve to explain the " innate " equipment of stereotyped responses present in the child at birth, without resorting to the mysticism of instinct psychology.

2. It is known that gestalt psychology, in setting itself the task of transposing the phenomenal patterns perceptually given into physiological gestalten, inevitably employs the introspective method. Now behaviorism is committed to the view that introspection has no place in scientific psychology. However,

[1] " Probability, Natural Law, and Emergence," *Journal of Philosophy*, 1926, Vol. XXIII, 421-435.

behaviorism rejects introspection as a *mental* event or process, but not as the process given in the verbal report method, i.e., responding to one's own responses. If the gestaltists are ready to admit that the conscious structure (or phenomenal pattern) as given introspectively *is* the brain pattern itself, and that phenomenal structures reduce to physical configurations, then another seemingly big difference between behaviorism and gestalt theory will vanish. Gestaltists hold that the contours of a visual pattern are constituted by the differences in electrical potential which map out the physiological boundaries of the cortical pattern. Does not this imply that if one had a complete picture of the brain configuration and the effector pattern involved in the response to some external field we could, from an objective study of the behaving organism, predict what the phenomenal configuration (including the *figure* and the *ground*) would be as given subjectively? If the gestaltists answer *yes*, then what difference is there between behaviorism and gestalt psychology? If they say *no*, then how seriously do they, and are we, to take their attempt to pass from phenomenal patterns to physical (generally electrodynamic) configurations?

The gestaltists have rather avoided the baffling problem of the relation of consciousness to the nervous system. But may we not gain some clue as to the relation of these two from Mrs. Ladd-Franklin's investigations indicating, as she thinks, that nerves have a phosphorescence and may glow by their own light. Dr. Sydney Alrutz[1] has also claimed to reveal evidence of a new form of radiation from human organisms. Such results, the writer believes, support the view for which he has argued, namely, that introspection is a kind of neural photography which goes on in the electrochemical reactions in cerebral processes, and that the chemical aspect represents a kind of degraded manifestation of a radiant energy which is introspectively given as consciousness.

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[1] *On the Dynamics of the Nervous System.*

RACIAL MINDS

By THOMAS R. GARTH

Professor of Education, University of Denver

Our world is shrinking so rapidly that the mind of man has some difficulty in adjusting itself to its new environment. Our traditional complacency is terrified by the fact that overnight something new has moved in next door. "The very idea of a man claiming to be in his right mind walking about the street with a Hindoo turban on his head; and those people with slanting eyes and yellow skins! Why don't they seek the beauty specialist?" What is more shocking than to be looking at a white front door and see a black form debouch therefrom! Social pressure has become so great against "kinky" hair that it has recently been known to writhe out longitudinally. The social pressure is just a part of our narrow view, due to our provinciality, which is in turn due to having been nowhere but home. The four walls of our home are falling away—receding to the ends of the earth, but leaving us with our four-wall mental attitudes. One of the four-wall attitudes may be just this idea that minds are racial, because, perchance, skins are racial, noses, hair, language, and likewise customs. Because of their unfamiliarity to us, these things are to be despised.

A rhesus monkey, Jocko, had occupied his cage with many other rhesus monkeys for several years. But one day a badger and his family were moved into the next cage with only a wire netting between. Jocko was thrown into spasms of protest at the strange maneouvres and appearance of the members of the badger family. He flew into a rage, he chattered petulantly, poked through the wire partition at the new occupants. For a long time he could not get over the strangeness of the situation. Though his spasms became less frequent never did he seem to get entirely over it. Even a dog will bite a stranger and fawn over an acquaintance. This reaction to the unusual or strange is a psychological phenomenon—in fact it is almost biological, not to say instinctive. At least it is a most natural thing to do—that is to regard the new with caution and even, at times with resentment.

This is no place to enter into the controversy about instincts, but if we might place this peculiar type of behaviour, whose roots certainly ramify into the biological, like so-called instinctive behaviour, in this category, we then may go ahead and discuss it. While it may be flying into the face of the theological tenet of original sin, there is in fact if we may say it, no instinct but seems to be valuable to the race possessing it. But we may extricate ourselves adroitly and cleverly by saying all instincts are good but we must learn how to use them, else they are dangerous, consequently bad if allowed to run wild. Then so-called race prejudice which has its roots in the biological, is a case of an instinct gone wrong. It must needs bring intelligence to its assistance.

Geographical barriers have been removed and races of men which have heretofore remained in a fixed locality are spreading over the face of the earth and intermingling of necessity. To react to them with a merely instinctive response would certainly be unwise not to say downright folly. Before we remove any races from the face of the earth as utterly impossible we must intelligently evaluate them. This evaluation must be a scientific valuation and must not be done off-hand in a spasm of race prejudice as some would do it.

But one asks if the thing called race prejudice is not something else besides reacting against the unfamiliar. Is it not simply reacting against something we do not like? And are not these dislikes native? This is rather a hard question, at least on its face. To be sure there are native dislikes and likes. One just naturally dislikes the bitter taste of quinine—at least a newborn babe reacts as if he did. There are other things which are met with *avoiding* reactions because we naturally dislike them, at least when they are first experienced, though familiarity seems to dull the disliking. The use of tobacco is a good case. At first the feeling reaction is characterized as being unpleasant but by persistence in allowing the stimulus to work, the organism forms a propensity for repetition of the experience and what was actually unpleasant turns into pleasantness and gives satisfaction. We believe that race prejudice, like all prejudices is just a case of closed-mindedness and nothing else but that. We cannot blame it on native likes any more than we can anything else which is learned can be blamed on native likes or dislikes. When once we bring ourselves face to face with even an at first disagreeable stimulus and do it often enough, it loses its disagreeableness. Just as vice is said to do—which though at first is of such a hideous mien we hate it, but seen too oft, we " first endure, then pity, and then embrace ". Familiarity overcomes the dislike and what was at first disagreeable becomes

actually a source of satisfaction. An old German lady said she did not see how any body could be a Christian and not be a German and she remained in this state of mind until circumstances compelled her to associate with people of another nationality when she discovered her mistake.

Our psychological writers have been warning us recently of a process called "rationalization". We get a motive aroused and are not aware of it. It is a sort of drive and determines our conduct without our being aware of its nature. It has been said that we are mistaken if we understand our motives. More often than not we do not for they are very subtle and may drive us into what may prove embarrasing situations when more enlightenment clarifies matters. There have been writers who have wanted to see in many races with whom we are coming into close contact, great inferiority, and so they have "rationalized" themselves into seeing what they want to see. Count de Gobineau was certainly one of these. While he wrote his famous book "The Inequality of Human Races" in 1853 it appeared in new edition in 1915. However, numerous books like it have since appeared and this brand of rationalization with its propaganda is going on at the present time.

Scientific procedure is the only way to get around such rationalization with its blind leading. We must needs find some way in which to measure racial minds before throwing them into discard. And that is what we wish to do—to indicate what the psychologist has done in the way of studying race psychology in a scientific fashion. The work has only been begun but a start has been made in the right direction and we should know the results as far as they have been obtained.

The time has come when civilized man, so called—or had we not better say thinking men, must evaluate the races of men scientifically without prejudice. The problem is now, "Who shall inherit the earth?" What human germ plasm shall be allowed to people the earth? Shall it be the white race, or another race, or shall it be all races? If any race is to be eliminated on what grounds shall this be done? What shall be the basis of our classification of races? To be sure the basis must be mental. Then this becomes a problem of scientific psychology. We must measure the socalled racial minds severally, and we must bring to our aid such scientific instruments as psychology can place in our hands.

The evaluation of racial minds by means of measurement presents a very difficult task at the very start because of the complication of the facts of modification. If you could catch a racial mind before it had been modified by its milieu, surroundings of all sorts,

you might try to measure it in its pristine state. But this is impossible as yet. We can only find it as it is changed and then undertake to measure it. Consequently the thing to do is to hold this thing of modification, or education, we can call it, constant and to measure various racial minds and then bring the results into comparison before we can reach a correct evaluation of them. But another difficulty, just as great as this one, is the fact that all the minds of a single race do not measure up equally—even though the Declaration of Independence would seem to indicate otherwise. It is then a question how to know who shall be representative of the racial group, and this is decided by taking, of course, the average or some similar figure. At least it must be some measure that is most representative of the commonest measure, or the one having numerous measures clustering close to it in point of size. But we must not forget that there are other measures below this average or representative measure as well as some above it. In order to proceed intelligently we must keep these facts in mind. The first is that any human mind begins to be modified immediately upon birth of the possessor and that minds in any racial group vary in native ability, i.e. native ability or acquired ability when measured in a large group distributes itself on a scale running from high to low, though most measures cluster around a point on the scale. The next step is to find a measuring device which will really measure the mental trait which we desire to measure. Of all embarrassing things it is to find that your measuring device has not measured the thing you started out to measure, and so you have results of uncertain significance.

With these three facts in mind, i.e. education, variability, and psychological measuring device, we begin to look about to see what the psychologist has done in the last thirty years or more in the way of measuring racial mental traits in order to ascertain if there are racial differences in these traits. Practically all races of men have been measured in the time span mentioned above by one psychological device or another. One of the first attempts was by Bache when he undertook to find differences in reaction time between Whites, Negroes, and Indians in America, but because of the small number of cases the results were not conclusive though interesting. Some six years afterward Woodworth at the Louisiana Purchase Exposition at St. Louis attended a Congress of Races and obtained permission to measure members of the racial groups in attendance. There were primitive peoples from the ends of the earth included in this experiment. The study confined itself largely to measurement of perceptive processes in these peoples,

though there was one study of a motor sort called the formboard test. According to Dr. Woodworth's findings there were no differences in the perceptive processes. There was a slight advantage in the formboard measures in favour of civilized peoples, but the investigator calls it merely a " crumb " in the way of a difference. The progress of the scientific measurement of racial differences moved very slowly. People scouted at the idea of measuring racial mental differences by psychological devices, but in the last ten years the movement has grown rapidly. The invention of the intelligence test gave it momentum and while this kind of test has been the one most generally applied, that is applied to more racial groups and larger numbers in those groups, possibly the one most generally applied next to the intelligence test is a test of aesthetics called the colour preference test. This has now been administered to about all races of men, meaning by this all coloured races there being at least one thousand racial representatives from each of the following races : American Indians, Negroes, Filipinos, Japanese, and Whites. But a study of colour preference is only scratching the surface in investigating racial differences in aesthetics. However, the native preference of Indians is the colour Red, of the Whites is Blue, of Mexicans is either Red or Green. The Filipinos prefer Red. Some studies have been made of racial differences in mental fatigue. Experiments are now in process to determine the musical talent of the races of men. It has been essayed to study racial temperaments but the work has only begun. Finding out facts about racial minds in a truly scientific fashion is a very slow and tedious process.

To go back to the intelligence tests, the tabulated records show that with the arrival of the group intelligence test about 1918 reputable racial studies of intelligence began in earnest and grew very numerous among psychological workers. Between 1916 and 1924 forty-five reports of racial studies appeared in various psychologica. journals and many more have appeared since then. This work was done by about thirty-five investigators of standing. Among these the racial groups studied, counting no group twice, were seventy-three, not including the white Americans always used as bases of comparison. Of these the group most studied has been the Negro for the simple reason that he is rather ubiquitous, and the psychologist more often than not must needs make use of such material as is available, for the work has rarely been subsidized by research foundations. This of course applies to the American negro, but some testing has been done among Zulus in Africa but to no great extent. The next group most studied has been a miscellaneous group called for convenience the Immigrant

group and includes immigrants in America or native born of foreign parents. In point of numbers studied and studies made, after these comes the American Indian, both mixed and full bloods, then come the Chinese tested either on American soil or in their native land, Japanese, Mexicans, and Hawaiians, and Filipinos. More than 20,000 American negroes have been studied, more than 3,000 American Indians, about 1,500 Chinese, nearly one thousand Japanese and over one thousand Mexicans and a large number of Filipinos.

Now the vital question is—What do these measurements of intelligence show? In the first place we ask: Which is the most intelligent race so far found? In order to answer this question in the light of the findings we must positively keep in mind the three factors mentioned above, viz. (1) the factor of education, (2) the factor of variability, and (3) the measuring device used along with skill in its administration.

It has become the practice when possible to reduce intelligence findings to IQ (intelligence quotient) units, which unit disregards the effects of age, a very desirable unit to have when we would compare one group's intelligence with that of another and especially when these groups are racial groups. If then we take the average white IQ of 100 as a basis of comparison, we find the average racial IQ's as found to be in the following sequence: Japanese, around 100; Chinese, around 100; Mexicans, about 72; American Negroes (Southern), 75; American Negroes (Northern), 88; American Indians (full bloods), 70. Since the Immigrant groups could not be taken as representative of their home stock we do not give their measures here. But if the reader is interested he can find these in the literature.

This shows up well for the Chinese and Japanese, and not so well for the others, the Negroes, Indians, and the Mexicans which are to be regarded more as mixed bloods—White and Indian. It may be objected that the factor of education has not been held constant in considering the results with reference to these underprivileged races, and that since the test was a white man's test it is not fair to measure these races with it. This last looks bad for the psychological measurements as scientific instruments and for the work of measurement as a whole, if it be a fair criticism. On the contrary, what shall we say of the Chinese: they have beaten the white man at his own game, for in spite of these aforesaid handicaps, whose reality we tentatively grant, as education, language difficulty, and manner of living, he does about as well as the average white man on his own test. The case seems plain, he succeeded where the black and red men fell down. And the case seems fairer for

the black man than it does for the Mexican and the Indian, since the Negro has mingled more with the white race than either of the others and so has the greater opportunity for doing well with the test on this score. At the same time the social status and temperament of the Negro may prove to be handicaps thus preventing maintaining the factor of education as a constant. These factors are very difficult of measurement. Since this question has not been answered by the psychologist we leave the reader to draw his own conclusions which must of course be tentative. He we would think, must maintain a suspended judgment—a most disagreeable state of mind but it seems necessary.

We have refrained from saying much of the second factor involved in measuring groups with psychological tests, here intelligence tests. But we must consider the native intelligence of an individual as a product of his heredity and this varies from one individual to another. There is no telling what Newton's IQ was or Galton's either. If we only knew the IQ of William James! Now the white race does not produce a Newton, a Galton, or a James every day; she seems to reserve that for grand occasions. Nevertheless the point is she can and has done it. They represent the great potentialities of what we call the white race. It is in the white germ plasm to do so on occasion. These are racial potentialities and the white race demonstrates that it can be done. Sometimes she slips a stitch and produces an idiot and she does not hesitate to do so on occasion—to our consternation. Now she usually produces an IQ of 100 and for that reason, of course, the IQ of 100 is found to be the most frequent measure and is consequently representative of the white race. Now then, what shall we say of the Negro and the Indian race? Can she produce IQ's above the average 100 for Whites? Just as can the White race? Investigator's have found Negro IQ's and Indian IQ's around 130 or 135. At once we want to know if these are really full blood Negroes or Indians. So far as we know they are. We are not going back on the returns and possibly have no right to do so. The point to be made is this, if Negro germ plasm or Indian germ plasm can and does produce IQ's above the white average once and oftener, can she do it again? Is it not a problem of eugenics and not necessarily of race? Is it not possible that in these races, if the measures are true measures, that inferiority has bred with superiority and that these races are possibly sad cases of careless breeding? In that case, when we take the facts of variability into consideration we might hesitate to say the difference is due to racial germ plasm altogether but is largely due to selective emphasis.

We leave this again for the reader to answer for himself. At

least these facts are signs of caution in making up one's mind, and caution should characterise the intelligent member of society, regardless of his colour, social status, or previous training.

It is just barely possible that the fact of variability will explode our four-wall state of mind with regard to other races and show that race prejudice has caught us napping again. That we find these people strange to us and so we indulge ourselves in a frenzy of racial hatred—calling them barbarians and inferior, when with a selective breeding they might equal or in some cases surpass the white race in point of mental endowment. Certainly they have extremely valuable potentialities.

AN ANATOMY OF ETHICS

By CURTIS BRUEN

An ethic is a statement excrescential to the psychic process as concentered on activity.

It is statement which is essential to the definition. The rest merely gives it an assignment within its expected limitations. Its relationship to the actual behavioristic process is uncertain, indefinite and insecure. Though psychology may with increasing adequacy describe the factual basis of ethics and its product be of great significance and usefulness, it will not radically alter the superstructure of ethics. However it may apply itself to the subject, ethics will remain essentially in its present expression. For ethics is free and apart, discursive and very loosely fastened to the actual. This large independence is its distinction.

The orders of ethics may be designated in accordance with the three major ethical emphases on doing, going and being. Doing has to do with acts, going with activity, being with primal living. The general ethic of doing and not-doing treats of the workings of the seeming determinants of actions and their correlative actualities. The ethics of going treat of the directives of activity, their formation and their application to the special processes of discriminant going. The ethics of being treat of basal moods of living.

I

Ventriloquism is widely and powerfully effectual. Through the application of this very versatile method, preeminent in the diversity of its sources, mediums and materials, complete and adequate cosmogonies have been established. Elohim's ventriloquised " Let there be " has been the sole and sufficient ground of the cosmic " there was " and is. In the preceding genesis, the universe, natural laws and commandments are alike brought into being in an original tour de force of ventriloquism. Certainly a method of such comprehensive applicability and thoroughgoing efficacy is the most secure basis of doing and not-doing.

In a much less vast and impressive aspect, ventriloquism is merely the literary figure used when disourse is introduced into narrative. But on account of God's rather dominant role in the

Yawist genesis and the succeeding transactions, his speeches presented through this device have a unique and special force. They are direct ventriloquisations of commandments spoken by God.

But even more significantly, similar ventriloquisms are mediated by someone else. The written record is in such cases a ventriloquism of the original " ventriloquist of God." Adam has fittingly become the first who practised the ethical method in this form. After the man had extended his rationalized vocabulary to woman, as though still under the novel stimulation of his freshly received gift, Adam has in translation been made to appear to continue talking to say, " Therefore shall a man leave his father and his mother, and shall cleave unto his wife: and they shall be one flesh ". In these words a commandment is first ventriloquised. This eloquent sentence is the beginning of the almost indigenous prophetic method in ethics.

But it was the Mosaic ventriloquism which was projected in the vastest and most magnificent style. After the Angel of the Lord appeared to Moses in the flame of fire in the midst of that enigmatically burning bush, the Lord spoke to Moses and chose him chief ventriloquist. Then the Lord spoke commandments to Moses, and Moses spoke them to the children of Israel. So it came to pass that when Moses sat as judge he could tell Jethro, " The people come unto me to inquire of God: when they have a matter, they come unto me; and I judge between one and another, and I do make known the statutes of God, and his laws ". Then Moses became the plenipotentiary between God atop Mount Sinai and the Jews at its base. And finally in a thick cloud, amid quakings of the mountain, thunder and lightning, smoke and trumpetings, the grandest feat of historied ventriloquism was consummated! Such was the spectacular staging of the ventriloquisation of the commandments, the statutes and the judgments of the Mosaic law which shows so many parallelisms to the Code of Hammurabi which was, however, originally handed down by the Assyrian god of righteousness and order, the sun-god Shamash!

The prophetic commandment ethic is originated through a twofold apotheosis of ventriloquism. It is based not only on a glorification of the auditory trickery but at the same time on a deification of the alleged source of the noises. In its displaced emphasis this use differs diametrically from the more obvious vaudeville belly-talking. The purposive delusion of the footlight performance is consistently overlooked. In fact the inexplicable trickery is changed from a puzzle into a surety. This tacit conversion gives the products their sanction.

The method of ethical ventriloquism is not, however, confined to the divine grand style. Since it is of most plastic applicability, it has many less heroic modes. Ideational personifications are among the later adaptations which form a large group of its sources. By means of an inherent partial personification following the continuance of a primitive thought habit, any conception is so equipped that it fits the function perfectly. Correlative to the persistence of a supposed etymology consistent with a tentative and surpassed viewpoint and usage, verbalisms, instead of undergoing a proper reversion to the negation which is implict in them, remain converted into misleading entities provided with unbefitting meanings and designated metaphysical. Such speculative encumbrances as well as discards and rejects in great variety still fit the method and continually supply new bases for ventriloquisation. Jeremy Bentham, whose rare wit and quiet knowing humour are uniformly delightful, mentioned some dozen sources of ethical ventriloquism in the notes to his " Introduction to the Principles of Morals and Legislation ". Most of those struck by his lightly glancing sarcastic yet indulgent words now seem absurdly stilted and ineffectual. Still there can be no dearth of ventriloquism since there remain and are ever devised anew an abundance of ventriloqual references.

A more specific phase of the ventriloqual process is illustrated in various current ethical formulae of widespread popular application. " What's right's right ! " This apparently tautological identity has distinct though fallacious meaning. According to the unique judgment some specific instance designated " what's right " is emphatically entered under the major conception of a universal principle of " right ". With a similar intent it may be asserted of an act, " It only stands to reason ", but this is no doubt to that self-negativing " some unknown reason ". In all uses the method is essentially the same. In each instance the ventriloquist possesses the queer unsearched virtue of making the source he adopts talk for him. And there are always the ethical intuitionists, those militant ventriloquists of whatnot !

But the origination is not the more significant or even the essential part of the ventriloqual interchange. It is the ventriloqual manner of acceptance that is of greater importance. It can occur when no purposeful ventriloqual origination takes place. Ventriloqual acceptance is the mental trait according to which ideational concatenations with their sentient accompaniments are received as such and entered into the psychic fabric with a minimum of processing by the individual. This use is essential to ethical ventriloquism. The thing presented is directly inserted into the

mind as so much furniture without significant testing or modification. Indeed individuals might be significantly rated on the ratio of the formal citation of such furniture to the just apprehension of vital processes in consciousness. Ventriloquism represents a psychological usage applied to all sorts of material, but in the case of the ethical which is implanted under special external pressure, the practice is most important because the imprint is most telling.

The entire potential force of the compellent sentiments and influences of societal coercion come to bear upon this act of ventriloqual acceptance. The ventriloquised stuff of the ethic of doing and not-doing is infused by the effect of such compunction. Even religion is paraded as an imperative apparatus adjunctive to morals! It is then an ethic of external impressment such as might be mediated by a code hard, invariable, rigid, treating solely of doing and not-doing, feeling and not-feeling, in agreement or not in agreement with its prescriptions. In its limitation of the actual experiences which must be dealt with according to the ethic to their bare relationships to its crude, tightly defined, fastly fixed formulations, such an ethic is necessarily evolved and enforced in a state of atrophied knowledge and appreciation of human experience. In the establishment of such regulations and the reduction of all acts to their relationship to them, all that is primary and genuine in experience is excluded. The single intrusive concern is not with living but with acts when from their primal realities have been sundered to leave only stark outlines. It is only then that scourging with stripes, burning with fire, stoning with stones, cutting him off from among his people becomes a valid and significant answer to a transgression!

The Pentateuchal penal process is likewise widely meaningful in the ethic of doing and not-doing. "The hands of the witnesses shall be first upon him to put him to death, and afterwards the hands of all the people. So thou shalt put the evil away from among you!" These clauses are but the outright presentation of the penal counterpart of the ethic. They are a flagrant statement of this function in the ethic under which occurs the immediate condemnation of a deed as such and of its perpetrator upon the formal infringement of a moral statute. For in accordance with the basic restrictions of this ethic and the radical atrophy under it, all must be "torn with the guilt of judging".

In these citations the primary ethic of doing and not-doing is neatly, conveniently, consistently and adequately epitomized. Plentiful correlative evidences are but supplementary to these texts which posit the essentials of the ethic boldly, incisively, definitively. The ethic of doing and not-doing is effectual. Ac-

cordingly it is not a simple statement but represents specific personal and societal imperatives.

Collateral influences of remarkable diversity play about the ethic of doing and not-doing as a special additive exposition or an elucidative, exhortatory or augmentative commentary on it. In its great literary and oral extent and variety, this comprises such genres as saws, proverbs, fables, moralities, preachments, moralisms, maxims, advice, laws. All these compose the curiously multifarious ancillary byplay.

An extensive and various speculative byplay is another accompaniment of the ethic of doing and not-doing. Its relation to the ethic is secondary and indefinite. In it problems are invented so that serious concern and labor may be directed toward their solution. It would be significantly pertinent to the ethic if the history of ethical thought were meaningful. Still ethical tendencies are in some uncertain way reflected in this process and give it a certain partial significance. In the memoir of his speculative circling which had the great philosophical merit of a formal take-off which proved essential to the modern development of the theory of thought, Descartes wrote, " I compared the disquisitions of the ancient Moralists to very towering and magnificent palaces with no better foundation than sand and mud : they laud the virtues very highly, and exhibit them as estimable far above anything on earth ; but they give us no adequate criterion of virtue ". The outstanding figures in recent ethical thought seem to have been similarly impressed by the contemporary moral superstructure and to have likewise found the sand and mud uncongenial. So they have attempted to excavate it and put in its room acceptable foundational criteria. The sequence of these endeavours is represented notably by Hume's cataloguing the moral qualities with special emphasis on their utility ; by Kant's single maxim elaborately mounted in an intricate bodiless architectonic ; by Bentham's inherited slogan applied through an elaboration of the erring traditional biologically referred pleasure-pain motivation as set off by a trigger sensitive to the algebraic sum of the sevenfold sentient qualities of a deed ; by Schopenhauer's plausible formulation of wrong as the extension of a person's will beyond its intrinsic bounds so that it infringed upon the proper exertion of the will of another ; by Comte's heralding of his positive morality ; by John Stuart Mill's conducting his utilitarianism through a dense underbrush of misconceptions and objections in an even urbane endeavour to explain it and to effect its general installation as an ethical basis provided with the sanction ordinarily reserved for the specificities of doing and not-doing ; and by Herbert

Spencer's arguing from his intellectualized conception of evolution toward a scientific basis for the principles of right and wrong in conduct at large. In each of these essays invention obviously takes the place of discovery, and establishment is substituted for demonstration. Of late speculation has been more circumspect and accordingly silent in this direction. The structures developed in such speculative byplay are to various degrees objectionable not only because they are false but rather because their very partial association with ethical actualities corresponds to a very unfortunate misplacement of emphasis.

Some are able to respect the ethic as far as need be for its empirical sand and mud alone. They describe its doing and not-doing as custom. "The laws of conscience, which we pretend to be derived from nature, proceed from custom", writes Montaigne, who soon after says of what "is, in truth, a great and shining virtue, and of which the utility is sufficiently known; but to treat of it, and to set it off in its true value, according to nature is as hard as 'tis easy to do according to custom, laws, and precepts". In the knowledge of Francis Bacon, "Men's . . . deeds are after as they have been accustomed". Undoubtedly it is only from custom one learns "to know the difference between right and wrong" before reaching some popularly decided chronological age.

Such an external view of the ethic confines it to the description of a phase of doing and not-doing and the societal processes that determine and enforce it. William Graham Sumner developed that firm body of thoroughgoingly sound and valid thought in which this aspect of the ethic was first given its complete form. Folkways are the fundamental elements of doing and not-doing. "They arise no one knows whence or how. They grow as if by the play of internal life energy. They can be modified, but only to a limited extent, by the purposeful efforts of men. In time they lose power, decline, and die, or are transformed". Ideated they are mores. The immediate ethic of doing and not-doing is the current cross-section of the large stream of inexplicably evolving mores. This evolution is the cumulation of the single moral process, the interaction of the individual and the mores. This equilibrium is the basic fact of morals. This interplay is its sole actuality. The entire internal play of the ethic or doing and not-doing derives from it.

II

The general ethic of going describes activity as determined in variable reference to some established standard which is at any

instant regarded simply as existent and fixed. The psychic whole is the source of the basic stuff of such ethics. Their material is some partial derivative of this. The specific detail of the various ethics of this type may be sought out in great diversity by the generally curious, in some preeminently acceptable dominant style by the seekers, or may be brought into somewhat systematic formulation by extraction from ones' own unordered psychic store by the purposeful. Each ethic of going includes some aggregate of moral considerations derived in such ways.

The ancient moralists especially set down their findings with great minuteness, exactitude and assurance. The greater part of the Nicomachean ethics consists of extended purposively thorough treatments of all available ethical topics. This aggregate of intelligent but undistinguished ethical comment is the actual matter of the book. Though quite unrelated to the manipulations of terms which build his formal system, these estimates constitute the substance of Aristotle's ethic. The restrictive sometimes shrewd discourses of Epictetus show an unusually complete and self-contained body of such material in stern, set, rigorous form. In the meditations of Marcus Aurelius Antoninus there is a man of spacious character, wide and generous appreciations, possessed of a fine faculty of coming upon magnificent thoughts and writing them greatly. But these are interwoven through fragments of lacubratory moralizings which fulfil Aurelius's primary intent of developing that cumulation of ethical maxims which are of no doubt tonic value as well as of genuine beauty of expression but are of manifest ethical inadequacy. All that is important in the meditations is focused toward the elaboration of those discoursings in accordance with which Marcus Aurelius would have deported his acts and sentiments. Indeed he set down the grandest fund of thought that has ever been the directive material of an ethic of going.

Besides ethical decisions in the ordinary form with the usual byplays of presentation, the aggregate often contains another and characteristic sort of constructions derived through the application of special thought processes. A large portion of discursive, as distinguished from factual, thought is evolved according to an entirely separate dialectic which, in deference to the more satisfactory formal logic and the developmental and productive scientific method, is not investigated save for the purpose of some specific negation. Since the processes of the primal logic when formalized are less differentiated from their psychological basis, several qualities which are really functions of the academic norms of thought are absent from its products. The logic is most adequately demon-

strated by certain distinctive treatments of words which signify all the processes centered on the symbols. When these changes are accomplished, the products are manipulated in the common manner. These special processes in the use of words are shown in their accretions, placement, association, application and emphasis. The products are words coupled, related, modified, magnified, projected, invented. Though the devious underlying psychological events do not approach the seeming simplicity of Locke's empirical combinations, they can no doubt be successfully investigated by anyone having the requisite imaginative insight and assertiveness. But when represented as verbal usages in a way comparable to the formulation usually practised by logicians, the operations may be indicated very simply.

The most fundamental device in this logic is that of the method of substitutive antonyms. A word subsumes a certain rather arbitrarily inclusive concatenation of things. Another comes to have connotations generally antithetical to those of the first. Some special relationship is established between the terms which have thus been opposed to each other. The efficacy of the artifice is enhanced by enveloping the complex of contrasted verbalisms with some specially distributed emotionalism so that effective attitudes are developed toward the components. When the original counterpart is divorced from acceptance, its antonym is finally made the sole reality. The experiential authenticity of either of the words of the couple does not in any way affect its usefulness. The application of this tacit methodology requires no set to bring its products towards any external empirical validity. This basic thought structure is an evidence of the profound importance of the actual function of word manipulation in dealings between the self and the external.

A contrasting method of extensive implicit usage in ethical and related thought is the use of the process of selective emphasis. Some especially acceptable element of experience or a suitably isolated faculty is seized upon to be made cardinal or the entirety.

Associated with this is the process of extended projection. With perhaps certain selective modifications a word is projected infinitely without regard to the scope of its derivation and corresponding meaningful application. To the selective intensification of the former process is added extended projection.

A like artifice is the introduction of the imperative mood into logic. Generally such a tendency is implicit in all the processes of the primal logic. According to this method of regarding and treating experience, the what-one-would-have-be is definitely enforced by the assertion of an absolute " There must be ! "

From the formal standpoint constructs are in addition simply brought into being. Logically the process is not at all complex. They are simply framed outright. Once produced they are variously used. Some just must have them. Some set them up in order to have something with which to check things up. Others erect them to actually try to go after them. For it has been written, Every dream has its somatic stimulus and every somatic stimulus has its dream. Currently this is a specially popular practice. Many are professionally concerned in the employment of this branch of the singular logic. In all cases words are the vehicle.

The function of the resulting ethical aggregate in relation to activity is various. It may be the intermediary in going, going along, going to, going away, going beyond. The going may be stated as conformable to whatever terms the ethical wayfarer may perfer to use to designate the content of the fund in relation to which he would regulate his way. Special modes of going are developed. Many of them are concerned primarily with going away, or may be represented most significantly in this aspect. This is very natural in that the place of departure is at least in some degree known. And John Locke who in a noteworthy manner alternated childishly naïve theologics with passages full of shrewdness, intelligence and insight, remarked, "A little burning felt pushes us more powerfully, than greater pleasures in prospect draw or allure". By means of the conception of the supreme good one even as sane as Aristotle might leave the futility of an infinite sequence of wishing and doing for the sake of something else. Epictetus devised a going away from the world as it is felt to a world that is specially ethicized. Aurelius left the things of this world as they appear by viewing them in relation to his largely conceived much greater world. The entire logic is directed toward facilitating ethics of departure and going beyond. Still it is very possible that the entire device be an ineffectual incidental byplay illustrative only the utter unrelation between living and the thought presumably associated with it. There is this decided remoteness of acting and talking about it, which is broadly purposive. Often if it is to any sum of authentic experience, which may be called life, that the conceptual substratum of an ethic refers, it is to that fund through a formulation that makes it so separate, unrelated and apart, the connection is beyond analysis. Such psychographies, cosmologies and metaphysics are widely accepted as corporated in what are vulgarly regarded as religions. It may be they originally come from the depths of personality but they only seem to be its crust.

There are several techniques for the application of these materials to the exigencies of actual going. A citation from R. W. Rolleston's Elizabethan English translation of Epictetus serves as the text for one of them. "Ordain for thyself forthwith a certain form and type of conduct, which thou shalt maintain both when alone and, when it may chance, among men". Some portion of the original psychic material is forged into this rigorous directive structure. Ordain for thyself and thou shalt maintain! Lay your track and run on it! Such is the tramway ethic! Any aggregate of ethical evaluations serves as some approximate sort of a track. The emphasis of this ethic makes the way definite, unvarying, decisive. But tracks may be of different sorts and lead to divers places.

There are however more elaborate ways of defining going. To maintain that Aristotlean moral state of virtue, one would steer away from the extremes most favoured by your personal drift and so zig-zag along between neatly placed opposite vices of excess and deficiency, moving along the prudent course of the relative mean while striving toward the arithmetical. A not very dissimilar though more entirely hypothetical plan is Herbert Spencer's reduction of the experiemental error of behavior until activity approaches homology with its absolute scientific description! Still more elaborately one may play ethical locus. You are a moving point. Your ethical conceptions are refined to form axes and co-ordinates. Your ethic is the equation which describes the path with which your activity should be identical. And then one may seek all sorts of ethical asymptotes.

But most fortunately one may plant ethical goal-posts. The ethic of going is then simplified far beyond the trolley car and made much less difficult than the aeronautical, laboratory or analytic geometry ethics. One merely sets up a goal and tries to make it. "A Yea, a Nay, a straight line, a goal"! That is all there is to it. These are reprssentative schemes of the nobly dynamic ethics of going.

Training is considered essential to their application. Most ethics of going emphasize the practice of conscious ethical gymnastics. Aristotle considered virtue solely the result of training and habit. Epictetus was continually insistent on exercise. The meditations of Aurelius are the journal of his own course of laborious practice. And training was the method of Benjamin Franklin's "bold and arduous project of arriving at moral perfection". It is a curious spectacle: this most excellent and widely inquisitive American intellect searching for lapses in thirteen superficial virtues so he could pencil jots beside them on an ivory sheet

to record his accomplishment from day to day as he trained himself "to acquire the habitude of all these virtues". Still "constant felicity" and most other things he valued in life he set down in his seventy-ninth year as owed to "this little artifice". Tolstoi did not come off as fortunately.

The gymnastics may become ethical calisthenics and the more intrinsic going that of the rather deliberative plastic artist of a passage from Stephen Mackenna's translation of Plotinus. "Therefore the Soul must be trained . . . Withdraw into yourself and look. And if you do not find yourself beautiful yet, act as does the creator of a statue that is to be made beautiful: he cuts away here, he smoothes there, he makes this line lighter, this other purer, until a lovely face has grown upon his work. So do you also: cut away all that is excessive, straighten all that is crooked, bring light to all that is overcast, labour to make all one glow of beauty and never cease chiselling your statue, until there shall shine out on you from it the godlike splendour of virtue, until you shall see the perfect goodness surely established in the stainless shrine".

"That self-improving Artist" as presented in the ethic that pervades each tract of the "*CHARACTERISTICS* OF Men, Manners, Opinions, Times, By the Right Honourable *ANTHONY*, Earl of SHAFTESBURY", whose "Largeness of Mind, and generous Use of Understanding", together with his amiable demeanour and uncannily frequent contemporary pertinence, give a permanent freshness to a large and considerable part of his most enjoyable writings, in a more comprehensive and intrinsic way "becomes in truth The *Architect* of his *own Life and Fortune*". Evaluation is fundamental in this process. Shaftesbury's entire ethic treats of a genuine art directed to the development of the most adequate personal instrument of evaluation and the perfection of the capacity for its inclusive thoroughgoing application. "To support this Design of his, he seems intent chiefly on this single Point; 'To discover, how we may, to best Advantage, form within ourselves what in the polite World is call'd *a Relish* or *Good* TASTE". This is expanded into the one comprehensive problem, "How to gain that *Point of Sight*, whence probably we may best discern; and How to place ourselves in that unbiass'd state, in which we are fittest to pronounce". Everything intellectual, appreciative, ethical is entered into the radical endeavour to "try effectually to acquire the real *Science* and TASTE of *Life*". All activity is basically directed "to the Correction of *Humour* and the Formation of a Taste", and "towards the correcting of the TASTE, or *Relish* in the Concerns of *Life*". "To have attained that Justness of *Taste*, . . . a *proportionate* TASTE, and *determinate* CHOICE,

in *Life* and Manners", is the one expansive evolving aim of the "great work of *reforming the* TASTE".

Such is Shaftesbury's ethic of the germinative growth of the intrinsic basis of evaluation and the significant relation of all experience to it. Such an evaluation is the original event behind all action and is here finely expanded to become the method of a wholly authentic ethic. It is stated fully and with nothing non-essential save the polite manner of speech. Taste has the important merit of being intrinsic to the taster and unable to break loose from the valuer as value did not long ago. The measure of all things is the firsthand reference to the psyche here consciously regarded as the basis of evaluation. The appropriation in each instance of a specific experiential grade and quality is the underlying event in the ethic of evaluation. That process is its essence.

"All life is a dispute about taste and tasting!

"Taste: that is the weight at the same time, and scales and weigher; and alas for every living thing that would live without dispute about weight and scales and weigher! . . .

"Thus spake Zarathustra".

The fundamental process of organic activity is realized, expanded, given a new scope and meaning. That is the whole of the very constructive intent of John Dewey. The recurrent critical synthesis, its reaction on the continuing basis of evaluation, and its projective influence in further activity constitute the going of this ethic. It is not movement but evolution. Santayana once called it the Life of Reason.

III

When the manifold elements formulated in certain former ethics become intrinsic to a person, they merge and embody a comprehensive and inclusive more fundamental ethic. This is a derivative ethic of being. The external components of a formal ethic have been thoroughly integrated in the individual. This signifies an entire inner conformity between acts, activity, living, and the self. When in accordance with such an ethic, those which have not a law, do by nature the things contained in a law, these having not a law, are a law unto themselves. Such an ethic is substantial and entire. It is the ethic of Walt Whitman's fine assertion,

> I give nothing as duties,
> What others give as duties I give as living impulses.
> (Shall I give the heart's action as a duty?)

which is only the directly ethical outcropping of his thorough-going mood of vigorous self-sufficient being.

" Ah ! my friends ! Let *your* very Self be in your action, as the mother is in the child : let that be *your* formula of virtue ! . . .

" Thus spake Zarathustra ".

But he called his formula a plaything and a new spreckled shell, for he mocked it thereby.

The going of a less intrinsic ethic may be a progress toward some final state of being. The rubaiyat of Omar Khayyam are the record of an arduous and fitful transcendence of the irks of not-doing and the recurrent doubts and perplexities of vain intellectual and theosophical going in order to the ultimate attainment of a fine, luxurious, wine-steeped, sensuous being ! In the excellent rendering of Justin Huntly McCarthy, Omar says, " In the kitchen of life, you savour only the smoke. How long will you study in sorrow the problem of being and not being " ? But to have asked more essentially, How long will you ponder the plagues of not-doing and of going ? he needed only the present terminology. Gargantua's liberality prompted by his own no little Pantagruelian merriment and gusto enabled Rabelais to arrive at a single bound into the contrary ethic of being contained in the one clause of the Thelemites : DO WHAT THOU WILT. In accordance to it " all their life was not spent in laws, statutes, or rules but according to their own free will and pleasure ". The transition from other ethics to an inherent ethic of being may be more purposively and sedulously accomplished. For him " who cannot attain the noble stoical impassibility ", Montaigne recommends " this popular stolidity of mine " ; for, he further sets down, " what they performed by virtue, I inure myself to do by temperament ". Such transitive possibilities are contained in all the more external ethics.

In addition there are distinct ethics which are originally ethics of being. Each of them is the plain expression of a mood of living. It is a purely descriptive statement which is a byplay wholly outside the actuality it describes. Since it is completely superfluous and ineffectual, such an ethic can alter nothing. It may on this account be in entire agreement with that of which it is the expression. An ethic of being can alone be successfully evaluated in reference to this very valid test which excludes everything divergent. It can therefore be wholly true and authentic.

The ethic of decrease is the rudiment of the extensive literatures of the several religions of cessation. Infused through the Vedanta in the Upanishads it is equipped with a rigorous discipline and special prescriptions for effectual meditatings conducive to the attainment of its end. The principle likewise permeates the directly derivative doctrine of the Bhagavadgita according to which the practitioner " withdraws his senses from objects of sense, as the tortoise its

limbs from all sides". For a differently devised primarily psychological universe, Gotama Buddha modified the meditational technique for the attainment of Nirvana. In each of these forms of the ethic is a single fundamental conception of life, a fittingly elaborated cosmos, some special regimen, and a uniform end for attainment. Each has specific means for bringing about the profoundly desired cessation.

But in their final forms these are only significant ethics if regarded as diverse developmental outgrowths on the ground of an original widely felt experience. For in each of its various guises, the primal reality is so largely confounded in the process of systematic elaboration and so extensively enveloped in structural accretions that it can be recovered only through intimation. Schopenhauer reaffirmed the ethic of cessation and set up in his own metaphysical world the simpler more essential version of the Denial of the Will to Live. But his insight was so penetrating his knowledge became so vigorous, he overleaped his system and realized the ethic of decrease in its pure authentic form.

The ethic of decrease represents a fact. It is the condition commonly and cheaply misstated, "There is nothing left to live for". No systematization can make it more authentic. As a religion it is lost in its accretions. As a metaphysic it is void. As a discipline it is priestcraft. As an ideal it is a meaningless preachment. As an aim it is nonsense. For it can be legitimately considered solely as an independent self-established fact. It is only as an experience underlying the genuine ethic that decrease is profoundly valid knowledge. Its ethic is one of the fundamental ways of life. It expresses an actual and important mood of being.

Decrease arises from vital knowledge instinct with its reality. The suffering of some all-comprehensive sorrow, the knowing the weighing unfulfilment of some primordial wish may constitute the Fire Sermon. From such comes the quietism of decrease. It comes to be unconsciously, intrinsically, inevitably. It comes in many degrees all radically the same. It comes and changes what life can mean to whom it comes. All capabilities of experiencing are overshadowed as by a grief that is irreparable, a sadness never wholly escapable, a conflict which cannot but obtain, a curtailment that cannot be forgotten, a mood which cannot cease. The feeling of such immedicable denial cannot leave desire and its objects unchanged. Wishing is lulled and altered. There can only be a lessened urge, a dimmed glow, a muted possibility of action and joyousness. Of these comes the withdrawal. These only the self can know. Such is the ethic of decrease or of the earlier partial cessation.

In all the eloquently intent rhythms of his utterances, Nietzsche " says ' yes ' to life ". The ethic of increase does also " speak in favour of life " and is as well an expression of the living that affirmation. It too is the ethic of a mood of being. It is the ethic of the keener quality, the greater amount, the fuller sum, the finer total, the life more abounding. It is the ethic toward augmentation, intensification, exaltation, ecstacy. It is the ethic of those who would be like gods—Homeric gods !

In the writings of Walter Pater the ethic of increase attains to its finest expression. The ethic, inherent to the degree of greatness of all art, becomes itself a treatise on an art of life. " The tablet of the mind " is to be maintained " in flawless evenness of surface to the impression of an experience, concrete and direct ". The fullest promise of the ethic is to be achieved through " the conveyance of an art—an art . . . of refining all the instruments of inward and outward intuition, of developing all their capacities," of " eager grasping at the sensation, the consciousness, of the present ". For him who " is wholly bent on living in that full stream of refined sensation ", certain moments of life shall be " high-pitched, passionately coloured, intent with sensation, and a kind of knoweldge which, in its vivid clearness, is like sensation ". The basic mood of the ethic is in the resolve " to give nothing but the highest quality to your moments, as they pass, and simply for the moment's sake ". Of the intent of such a moment Amiel has written, " Each bud flowers but once and each flower has but its minute of perfect beauty ; so, in the garden of the soul each feeling has, as it were, its flowering instant, its one and only moment of expansive grace and radiant kingship. Each star passes but once in the night through the meridian over our heads and shines there but an instant ; so, in the heaven of the mind each thought touches its zenith but once, and in that moment all its brilliancy and all its greatness culminate ". Living Pater's ultimate aesthetic refinement of the ethic of increase is the constant renewal of " this precise and fleeting moment " till life is the maintenance of its exquisite fervor. " Every moment has some form perfect in hand or face ; some love choicer than the rest ; some mood of passion or insight or intellectual excitement is irresistably real and attractive to us,—for that moment only ". Life is a sequence of moments, quickened, vibrant, glowing ! " To burn always with his hard, gemlike flame, to maintain this ecstasy " is fulfillment. This is the noble intensified elaboration of the ethic of increase. Whatever Arthur Symons writes breathes of it. Llewelyn Powys is its exemplar.

In a single apothegm dropped into that flow of writing which

made his histories, Fielding originated an ethic. " The wise man gratifies every appetite and every passion, while the fool sacrifices all the rest to pall and satiate one ". A single maxim is corollary to it. " Wisdom, in short, whose lessons have been represented as so hard to learn by those who never were at her school, only teaches us to extend a simple maxim universally known and followed even in the lowest life, a little further than that life carries it. And this is, not to buy at too dear a price ". Its general application is illustrated. " Now, whoever takes this maxim abroad with him into the grand market of the world, and constantly applies it to honours, to riches, to pleasures, and to every other commodity which that market affords, is, I will venture to affirm, a wise man, and must be so acknowledged in the worldly sense of the word; for he makes the best of bargains, since in reality he purchases everything at the price only of a little trouble, and carries home all the good things I have mentioned, while he keeps his health, his innocence, and his reputation, the common prices which are paid for them by others, entire and to himself ".

Referring to " *the United Structure and Fabrick of the Mind*, and those Passions which constitute *the Temper*, or Soul ", Shaftesbury affirmed with like intent, " That in *this Constitution*, the impairing of any one Part must instantly tend to the Disorder and ruin of other Parts, and of the Whole itself; thro the necessary *Connextion* and *Ballance* of the Affections ". For " 'tis most certain, that wherever any single good Affection . . . is overgreat, it must be injurious to the rest, and detract in some measure from their Force and natural Operation . . . Whoever is the least vers'd in this moral kind of Architecture, will find the inward Fabrick so adjusted, and *the Whole* so nicely built; that the barely extending of a single Passion a little too far, or the continuance of it too long, is able to bring irrecoverable Ruin and Misery . . . The Mind, dwelling too long upon one subject (whether prosperous or calamitous) sinks under the weight of it, and proves what the necessity is, of a due *Ballance*, and Counterpoise of the Affections . . . . There are more Wheels and *Counter-Poises* in this Engine than are easily imagin'd ". And it is according to " this Scheme of *Moral Arithmetick* . . . the main *Sum* or general Account of Happiness is either augmented or diminish'd ".

As Schopenhauer wrote the pure ethic of decrease while concerned with demonstrating the final application of his metaphysical will, Spinoza touched upon an ethic identical with these while on his geometrical way to the culmination of his passion. " Whatever disposes the human body, so as to render it capable of being affected in an increased number of ways, or affecting external

bodies in an increased number of ways, is useful to man; and is so, in proportion as the body is thereby rendered more capable of being affected or affecting other bodies in an increased number of ways; contrariwise, whatsoever renders the body less capable in this respect is hurtful to man". Now "that which constitutes the specific reality of the human body is, that its parts communicate their several motions one to another in a certain fixed proportion. Therefore, whatsoever brings about the preservation of the proportion between motion and rest, which the parts of the human body mutually possess, preserves the specific reality of the human body, and consequently renders the human body capable of being affected in many ways and of affecting external bodies in many ways; consequently it is good". So "those things are most useful which so feed and nourish the body, that all its parts may rightful fulfill their functions. . . . The human body is composed of very numerous parts, of diverse nature, which continually stand in need of fresh and varied nourishment, so that the whole body may be equally capable of performing all the actions, which follow from the necessity of its own nature: and, consequently, so that the mind may also be equally capable of understanding many things simultaneously. This way of life, then, agrees with our principles, and also with general practice; therefore, if there be any question of another plan, the plan we have mentioned is the best, and in every way to be commended".

Fundamental to each of these treatments is the uniform substance of an ethic of a manner of life. These different expressions of the harmony ethic are identical in their basic content. Man is regarded as compounded of manifold elements which cultivated symmetrically produce the greatest growth and fullest flowering. This ethic is fulfilled in an entire symphonic expression of all the capacities and impulses of the whole human being. When the multitudinous entities resolved from experience with man are resynthesized, the manifold seems such that the naturally proportionate functioning of each element should result in a wholly fine state of being. Such a complete, proportional and entire expression should result in a concordance of human powers. This harmony ethic is the intermediate ethic of being, not of emptying or of filling, but of fullness. It is the ethic of living well, freely, fully. Actually the entire totality of living to be achieved under the ethic is as various as the several idioms in which it has been written. Its actual meaning is to continue genuinely and generously in one's acceptable mode of living. This tolerance makes it an adequate personal ethic of being.

Of the many alike great minds that have written some version of

this harmony ethic, Plotinus has given it its purest and most vital expression. " If mere being is insufficient, if happiness demands fulness of life, and exists, therefore, where nothing is lacking of all that belongs to the idea of life, then happiness can exist only in a being that lives fully.

" And such a one will possess not merely the good, but the Supreme Good if, that is to say, in the realm of existents the Supreme Good can be other than authentically living, no other than Life in its greatest plenitude, life in which the good is present as something essential not as something brought in from without, a life needing no foreign substance called in from a foreign realm, to establish its good.

" For what could be added to the fullest life to make it the best life " ?

The ultimate extension of the ethic of being to the infinite multiplicity of the moods and details of actuality unmodified by concessions to the falsifying simplificatory exigencies of statement transcends its possibility. For the ethic should have to be a protean one to entirely describe the original human behavior which through certain processings is extracted and isolated to form individual ethics. Such extension attains to the negation of an ethic. And ethical inquiry ends.

SOME NOTES ON MEMORY

By C. BLOOR, M.A.

When the psychologist tells us that we are what we are at the present moment only in virtue of every past moment of our lives, we would I suppose all admit that in some vague way this may be true. We may go even further and admit that we at the present moment are the result not only of our own past life but of that of the whole human race from its earliest beginnings. It is perhaps extraordinary that the burden of this does not lie more heavily upon us. "Why", we may ask, "are we not at this moment weighed down by the incubus of this past of millions of incidents, which however trivial they may have appeared to us yet seem to be of momentous import"? To this question we might add another: "Where exactly is secreted in our own person the impress of this past"? So far from being weighed down by the past are we, we may assert, "that at this moment we cannot even remember half the content of our life of yesterday or even of an hour ago". In this assertion we have introduced the word 'remember' in the most natural manner and here I suppose we believe that the key to the problem lies.

But 'memory' as it is used in common speech appears to be something much narrower than this vast idea of the influence of the past upon present experience. Let us consider three ordinary types of assertion which may be encountered any day. "I seem to remember that face". "I remember that I have an appointment at three o'clock" and "I remember that William the Conqueror landed in Britain in 1066". In these three statements are included varieties of mental activity which, while they may with justice be grouped under the heading of 'memory' are yet by no means identical.

"I seem to remember that face". That is to say, I am inclined to believe although the evidence is not at the moment forthcoming that this particular face has figured before in my experience. With this belief in my mind I make an effort to 'recollect' as we say the circumstances of this previous encounter. I may or may not be successful in doing so but one thing is certain: as I proceed with my self-imposed enquiry, hosts of associations come

crowding into my mind the existence of which I should have said unhesitatingly a moment ago had been completely forgotten. If the effort of recall is successful I have a feeling of satisfaction apparently quite disproportionate to the importance of the incident. If on the other hand not all my seeking can recapture the vanished scenes then I am aware of strain and uneasiness. So does an elusive tune haunt us. At one moment it is almost on our lips—at the next it has vanished. We are unable to turn our attention to other things and when at last it springs complete to our mind we feel a real pleasure and relaxation. Where was the tune—where was the face? We could not place them but we knew that they too left a trace somewhere in our organism and that our task was to connect up this mark with present experience.

This takes us back to our starting point. Here at random, we have found two experiences—one a face once seen, the other a piece of music once heard. They presumably left an imprint but it never troubled us until something in our present experience stirred it. This then is the theory. No experience in our life is too trivial to leave behind it a permanent trace—it may be a physiological modification of the brain—known as an imprint or an engram. This engram modifies the previous existing disposition of the organism and in particular it becomes associated with others having common elements. The most potent common element in the grouping of engrams is believed to be the feeling or 'affect' which attended the original experience. Our attempt to recall the original experience may be considered as a working backwards along the association lines and when at last we become aware of the initial event we say with conviction that we remember it.

"I remember that I have an appointment at three o'clock". At some moment in my past life then I made this appointment and it is this action of mine in the past which now maintains its modifying influence on my present activities. Between the making and the keeping of the appointment I occupy myself with many things to which I devote my 'attention' but the condition is always present that my intermediate activities may not be inconsistent with the determining tendency set up when at one particular moment I agreed to a certain course of action at three o'clock on a future day. It is my awareness of this action of mine in the past when deliberately I circumscribed my future movements which constitutes what I call my "remembering that I have an appointment". Sometimes it is true I forget that I have an appointment. Does this mean that my action at the time of agreeing to the appointment left no trace behind it? We should readily

agree that this is not the case. More complicated processes are here at work. Often we can recognize that it is the opposing course of our present interests which prevents us from keeping the appointment—in short that we do not want to keep it—and even when we do not recognize it and exclaim with horror that we are utterly unable to account for our failure—the psycho analysts tells us that it is still true that we did not want to do it. But it is not germane to our present discussion to pursue this train of thought further.

" I remember that William the Conqueror landed in Britain in 1066 ". Quite clearly this particular landing on British shores never formed part of my own experience and the influence which this event undoubtedly exercised upon my personal life would yet never have provoked the assertion given above. But the explanation is obvious, it will be claimed. You were at some time in your life told of this event and what you ' remember ' is the result of the imprint left behind by this experience of being told. This explanation, clearly a true one, serves to throw still further light on this elusive problem of memory. " Memory " says Professor Spearman, " consists in the recognition of the past as such " and when we make an assertion such as the above it implies that at some time in the past we have as it were given our ' assent ' to the information.

From this preliminary discussion certain points have perhaps emerged. They may seem elementary and even obvious but the recognition of them is indispensable if we are to have any understanding of the ' memory process '. Psychologists to-day prefer to talk rather of the processes of remembering and forgetting rather than of ' memory '. There is a danger that we may imagine ' Memory ' as some mysterious entity or ' faculty ' with which we are endowed. To the question " What is memory ? " it would be difficult to give a satisfactory answer except perhaps that as a thing ' memory ' has no existence. But to the question " What is known about our remembering and forgetting ? " it may be replied that some laws are at least surmised in the light of which these complicated processes may be to some extent elucidated. Starting from the axiom that all our experiences leave behind a trace, we may proceed to the next point. There are some things which apparently just happen to us, and as we say familiarly leave little impression upon us. We shall now concede that they do leave some impression but what we mean is that we are not at the time aware that they have any determining influence on the course of our conscious life. We therefore ' forget ' about them. Subsequent events may lead to their

recall as we saw for example in the illustration of the forgotten face. We are therefore driven to the explanation that the memory traces left by such events since obviously they existed, must have survived subconsciously. The validity of the assumption of their subconscious existence has been argued by opposing schools and much work has yet to be done in this field. Some such hypothesis seems to be the only one in terms of which an explanation can be couched but the problems raised by it are difficult ones.

Let us turn now to those activities of our life which we pursue with the knowledge of their future bearing, or which we may say that we wish to remember. Such activities will include all that we try to learn—whether it is a form of practical skill or the acquisition of mere information. Here ' to remember ' is to our advantage, ' to forget ' disastrous. We are wont to deplore the fact that we are born with a poor memory, and driven to what we call adventitious aids to memory. We welcome perhaps with avidity the advertisement of a new ' Memory System ' which will remove our disability. Then the psychologists tell us that ' memory ' in the abstract can never be improved, that we are born with a certain innate retentiveness which is a physiological mechanism reaching its maximum efficiency of functioning at a comparatively early age. This would appear to be a discouraging statement were it not that on investigation it is found that it does not imply that we cannot help ourselves to remember particular events provided always that we want to remember them and that we are prepared to incorporate them into a well consolidated whole. Let us therefore eliminate the idea of improvement of abstract memory and consider some of the experiments which have been conducted in the hope of elucidating the memory process in particualr cases.

PART II

Some Experiments on Memorizing

When we speak of memorizing we are inclined to associate it particularly with the learning by heart of such things as dates, multiplication tables, or poetry. But when we learn to dance the Charleston, or to play the ukelele, we are also ' memorizing '. In psychological language the acquisition of a form of skill no less than the learning of a piece of poetry is an example of the remembering process. But, it may be said that the execution of a step in dancing or skating, or the efficient use of the typewriter, are essentially examples of habit. To this we must reply that in the consideration of this aspect, memory and neural habit are the same.

Many experiments have been devised with the object of discovering for example the most expeditious and advantageous method of attacking a piece of poetry which we want to learn. Here we must distinguish between the two aims of reproducing immediately that which we have learnt and of being able to reproduce it at some future time. The latter is clearly the more permanent process and requires the more complicated machinery for its establishment. For the testing of immediate reproduction experiments have been carried out with a view to ascertaining at what age in children the power of memorizing for immediate reproduction appears to reach its maximal intensity. We are all familiar with the extent to which the meaning of a passage read will help in the process of memorizing it. A single sentence of say twenty syllables can be reproduced by adults after once hearing it with little effort. If however instead of a coherent sentence we heard twenty meaningless syllables, it is clear that the task would be much more difficult. The introduction of nonsense syllables into memory testing has eliminated the important factor of meaning and has so helped to discover some laws which apparently cover the power of retentiveness for immediate reproduction. The main result of such experiments appears to be that this capacity grows slowly and is much greater in adults than in children but that after the age of twenty five no further improvement is in general shown. What then becomes of the theory asserted so often that the 'memories' of children are superior to those of the adult?

We are able now to recite little poems which we learnt as children and have had no opportunity for relearning and yet if we try to reproduce a speech from Shakespeare which we in a moment of enthusiasm committed to memory in recent years, our efforts are disappointing in their result. We see that here a different problem is at issue. When we were the subjects of the nonsense syllable experiments the test was in the power of immediate reproduction. Now it is a question of delayed reproduction or of permanent retention and it is in this respect that children would appear to possess their real superiority. The results of experiments worked out on these lines suggest that in respect of retentiveness, capacity increases up to the age of twelve.

From the point of view of experiments on memory it is important to bear in mind that what we forget is at least as important as what we remember. The two processes are part of one whole and they are grouped together under the technical heading of 'Reminiscence and Obliviscence'. It is clear to all of us as was emphasized in the first article that forgetting is an indispensable

accompaniment of all our experiences. That is to say apparent forgetting for we saw that much which we imagined ourselves to have forgotten could under the necessary stimulus be recalled. We touched very lightly upon the question of the influence of the ' wish ' upon forgetting and realised that here we were in the province of what we may agree to call the subconscious mind. But in the very concrete and definite matter of learning for example a few lines of poetry we should at first sight appear to be far removed from these somewhat mysterious influences. But there is a theory, strongly supported by experiments that even here in this concrete sphere there is evidence of strange recuperative activity on the part of the memory process.

We are well accustomed to the fact that after waking in the morning from a refreshing sleep we find that we can remember more of some particular topic than we could before falling asleep on the previous night. This phenomenon we are accustomed to ascribe lightly to the healing influence of sleep working on previous fatigue. But it appears that there is more in it than that. Ebbinghaus, the introducer of ' nonsense syllables ' performed several experiments on the time taken to relearn a series of such syllables, after intervals varying from 20 minutes to a month or more. As was to be expected a saving of time in the relearning was remarked after the intervals, and so some idea was arrived at of the proportion of material forgotten in successive intervals.

But the most interesting and illuminating experiment in this direction was that performed by Dr. Ballard upon elementary school children in London. The children were given a poem which they had never seen before and allowed a definite time for learning it. They were then required to write out as much as they remembered. After an interval of two days during which the children had been given no opportunity for relearning the piece, and were not expecting any further test they were asked to write out again what they remembered. The results were significant. The average number of lines remembered at the second testing showed an increase of over 10 per cent. on the previous results. Impressed by these results the experimenter tried a similar experiment on more than 5000 children, of different ages and allowing different intervals of time between the first and second repetition—the same batch of children never being retested more than once. Every care was taken to eliminate complicating disparity of circumstances. With children between 12 and 13 years of age he found that for intervals of up to three days' duration there was a gain, but that after this, a loss in the

amount remembered. The maximum gain however with this age group showed itself quite clearly to be after an interval of two days. With younger children, of from 5 to 7 years of age a greater degree of improvement was seen, and in this group the interval which gave the maximum reminiscence was three days. It is not necessary to enter here into the actual statistics involved but one aspect deserves notice. The improvement shown at the second repetition did not consist simply in additional lines remembered. Let us suppose for example that at the first reproduction ten lines were written out correctly and at the second twelve; of these twelve lines, perhaps eight would have appeared in the first reproduction, and thus four lines had in the intervening time been recovered. In this hypothetical case, using the technical language of the psychologist we should say that 8 out of 10 or 80 per cent. represented the actual retention of the amount originally reproduced and two out of 10 or 20 per cent. would represent the improvement, while four out of ten or 40 per cent. would represent what is called the reminiscence, and 2 out of ten, 20 per cent. the obliviscence.

Reminiscence is defined as an improvement in the capacity to revive past experience. The opposite process of obliviscence, or the deterioration in the capacity to revive past experience is a phenomenon with which we are unfortunately only too familiar. It is then comforting to reflect that we may possess a counter asset in the form of recuperation. "There is," says Dr. Ballard, "a strong tendency towards oblivion in unrevived memories but there is a conuterbalancing tendency towards reminiscence". Our comfort is however not very permanent for he points out that it is a tendency which seems to disappear with age and of which little trace can be found in adults.

The explanation of the phenomenon has yet to be established. It looks as if it must inevitably be sought in the conception of subconscious activity. We may close by reverting to the theory touched upon at the beginning of the first article of the traces left by all experiences. We have seen how these traces become organized amongst themselves and how trains of associations link them up with present experience. We are accustomed however to regard them as latent and even passive. The experiment outlined above would appear to suggest that they have at least a potential activity. It is a fascinating and suggestive thought that we never know when we may be confronted in our conscious life by the evidence of such activity. Are we to believe for example that the apparently spontaneous products of what we call genius are the outcome of subconscious elaboration?

Much more might yet be said touching this elusive subject. We have not yet even discussed the best way to learn a piece of poetry. Still less have we found a golden road towards a perfect memory. But perhaps enough has been said to persuade us that when we say so lightly 'I remember' this simple statement yet embodies the results of a highly complex process.

CURRENT INTELLIGENCE

U.S.A.

Professor O. L. Reiser, whose *Alchemy of Light and Colour* will shortly appear as a *Psyche* Miniature, has recently framed a prayer, suitable for psychologists of the newer school, from which we extract the following :—

" Thou Cosmic Movement Continuum ! we petition thee to lend auditory discriminations to these our laryngeal contractions. Lower the threshold of thy sensory discriminations so that our neuro-muscular-glandular activities do not expend themselves as wasted reflexes. May the alterations in the configurations of our pitifully finite electron-proton aggregates find sympathetic resonance in thy visual receptors.

May the threefold division of our receptor-conductor-effector mechanisms receive to the full the beneficence of thy cosmic bounty. Bathe our receptors in thy irradiations of energy-flux, so that our cerebro-spinal neurones are ever dynamogenic. May our cortical pathways always keep vigilance over our lower reflexes. And we humbly ask thee that our endocrines may not hypertrophy, nor our hormones become toxic . . . Increase our opsonic index ; accelerate our reaction time ; thus may we approximate perfect obedience to the energetic imperative. And though we walk through the valley of the shadow of depressed metabolism, may we secrete no useless adrenalin.

Give us this day our customary calories ; forgive us our maladjustments as we overlook other loci their inadequate movements. And finally when the negative accelerations of each configuration of movements brings on senescence, and the second law of thermodynamics triumphs over our biochemical reactions, we pray, O Omnipotent, Omnipresent and Omniscient Cosmic Movement Continuum, that thou wilt receive each and every locus back into thy primordial Space-Time Bosom."

University of Pittsburgh. OLIVER L. REISER.

CURRENT LITERATURE

Speech, its Function and Development, by GRACE ANDRUS DE LAGUNA (New Haven: Yale University Press: London: Milford. 1927, 23/-).

The present treatise, due to the Associate Professor of Philosophy at Bryn Mawr College, is an avowedly theoretical essay, from the behavioristic standpoint associated with the name of E. A. Singer, Jr., on the much disputed question of man's psychic origins. Though the authoress in her *Preface* modestly speaks of her book as offering merely " a tentative and partial theory " of the development of human speech from the animal cry; forbears " to trace, even schematically, the course of speculation on the subject of language," remarking that such a history would be chiefly instructive " in the seeming futility which it reveals "; recognizes to some extent (but on the whole, and in practice, tends to deny) how hazardous it is, in the present state of the sciences concerned with man's evolution, to seek to reconstruct the development of human speech and intelligence; nevertheless, while possessing none of the technical equipment of specialists in linguistic, in anthropology or in prehistory, many of whom, in spite of their vast detailed knowledge, have been deterred from such attempts both by the formidableness of the problems involved and by their realization of the inadequacy of the data actually at our disposal; and enjoying only such second-hand and slight acquaintance with linguistic facts as can be gained from the perusal of a meagre number of books and articles on general linguistic, she has written a work the general tone of which would give the reader the impression that what in reality are very often the most specious conjectures and apriorisms, un-proved, un-provable and based upon the evidence of what she calls " indirect ", and the present reviewer irrelevant and insignificant, data, are authentic, demonstrated facts.

Her book,[1] which opens with a distinction between " speech " and " language " reminiscent of the methods of the late F. de Saussure, consists of three parts: 1° " The rôle of speech on society " 2° " Aspects of mental evolution "; 3° " The rôle of speech in the life of the individual." It aims, by elucidating the respective functions which speech performs in society and in the life of the individual, as well as the manner in which " speaking as a social enterprise is related to other forms of group activity ", at throwing fresh light both upon the evolution of speech and intelligence and

[1] Unfortunately, in this brief notice no attempt can be made either to expound or to criticize the separate theses of the book: of each of these, as of the general behavioristic position adopted, it would be necessary to enter upon a methodical critique, which, with points of detail, could not be set out in less space than O. Leroy in his two brilliant studies (1925 and 1927) has devoted to a refutation of the theories of primitive man held by K. Bücher and L. Lévy-Bruhl.

upon " speech as a phenomenon of individual psychology." Neither from the genetic nor from the descriptive point of view can the book be regarded as an important contribution to linguistic thought. On the one hand, the evolutionistic theses which the authoress puts forward are, though of a different nature, of scarcely any more value to the student of general linguistic, where the pressing need to-day is for clear definitions of fundamental concepts, adequate terminology and a body of doctrine rigidly built up out of empirical data, than are to the ethnologist the evolutionistic theses of Spencerian and Tylorian ethnology, which in his characteristic fashion B. Laufer (*American Anthropologist*, XX, [1918]) has dismissed as " a cheap toy for the amusement of big children." On the other, the descriptive account of the rôle played by speech in society and in the life of the individual contains little that is new, and not infrequently indeed consists of old doctrines set out in new (behavioristic) terms. Here one might protest against an apparent assumption on the part of the authoress, inasmuch as she claims that, while " the essentially social character of language "—her own words are here used on account of the verbalistic distinction: speech: language—has been recognized by Durkheim and his followers, " the conception of the social *function* of speech " has been lacking before her: respecting this not a little will be found in the writings of the many European linguists, whose conceptions might to behavioristic omniscience well appear " futile ", but whom she ignores or very scantily cites.

Again, apart from the misstatement, the expression is rather strained when we read (*Preface*, p. ix): " But the activity of speech has always been regarded from the standpoint of individual psychology ". For the reviewer, the term " individual psychology (*Individualpsychologie, psychologie individuelle*) " is nowadays primarily associated with the name of Alfred Adler, author of a book which in the English translation bears that name; though what the authoress means by " individual psychology " is clear to any one who has read Part III of her book, which for the most part diffusely recapitulates, from the standpoint of the individual, what has already been said in Part I, the use of a vague, general sense of terms of specific signification is strongly to be deprecated.

The authoress very explicitly states that in her opinion the general behavioristic position adopted is " absolutely fundamental to the whole treatment of speech ". What philosophic assurance! Year after year philosophers of almost every school tell us that their manner of considering language (speech) alone possesses a *raison d'être*, and yet how many of them have made a profound study of the object of their consideration? From such studies as the present, linguistic can derive but little benefit and philosophy only fall into disrepute. F. H.

Character and the Conduct of Life, by WILLIAM MCDOUGALL (Methuen, 1927, 10/6).

The psychologist who would write for the man in the street must beware of the psychological Scylla and Charybdis. He is frequently accused, on the one hand, of writing abstract theory that has no direct bearing on human life as known to the reader; while his laboratory practicalities are looked upon as unnecessary details, equally divorced from human interest.

Professor McDougall in *Character and the Conduct of Life* has at least steered a clear course with regard to these dangers, for he has given a careful and detailed account of how he considers man should act, in order to make the best of his possibilities, his physical and mental qualities. Man is taken to pieces before his own eyes as it were, and shown how he works: not only his own inner self but how he co-operates with his fellows. The relationships of parents and children and husbands and wives are studied, while Young men, Girls and Young People are also treated separately.

Certainly he is painstakingly concrete, in matters of universal application, but thereby he has laid himself open to the criticism "But is *this* Psychology? My doctor has been telling me this for years and the parson only last Sunday . . . ."

M. R. H.

THE ARTIST'S LEAGUE

The third meeting of the Eclectics, the first and second having already been reported in *Psyche*, was held in the Royal Societies Club last October, when Mr. C. K. Ogden read a paper on the possibilities of co-operation between the psychologist and the artist in the field of Colour. The programme of the Artists' League for an International Exhibituion of the Science and Art of Colour was discussed in its economic aspects. It was urged that the effects of the progressive isolation of persons of sensitivity, with the development of mechanized commercialism and its temporary corollary Noise, could only be regarded with equanimity by advocates of the Next War. In particular the equivocal position of the Catholic Church in relation to Modern Art was correlated with the decline of intelligent patronage and the reversion to effete forms of social display, such as the Opera, in America. Whether the future of the artist lay with the scientist, the feminist, or the pacificist might be an open question; but left to himself he would gradually be exploited or psychologized out of existence. In the next war camouflage will be unnecessary, colour-photography will supersede aerial impressionism, while portraits of generals can now be made realistically from death masks. We have largely lost our sense of smell, and there is no reason to suppose that sensitivity to colour will remain unless it is constantly stimulated.